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Environment Council of Alberta

1984 ANNUAL REPORT

Alberta
ENVIRONMENT COUNCIL OF ALBERTA

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Letter of Transmittal

Lieutenant-Governor in Council
Legislative Building
EDMONTON, Alberta

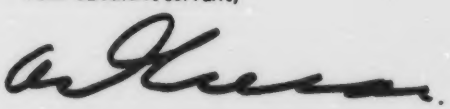
Honorable F. Bradley
Minister
Department of Environment
132 Legislative Building
EDMONTON, Alberta

Sirs:

I have the honor to transmit herewith, the Annual Report of the Environment Council of Alberta for the year 1984 as required by Section 7(1)(h)(i) of The Environment Council Act.

I have the honor to be Sir,

Your obedient servant,



A.D. Crerar
Chief Executive Officer
Environment Council of Alberta

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1. MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

For environmentalists, 1984 will not be noted as a vintage year. In 1984 the environmental movement was subjected to pressure reminiscent of its initial years. It is 22 years since the publication of *Silent Spring*. How many can remember the disbelief, the hostility, the contempt for alleged irresponsibility that faced Rachel Carson when she warned of the dangers of DDT and other toxic chemicals? It took 10 years for her message to be accepted, understood, and acted upon.

The next 10 years, from 1972 to 1982, will probably be looked back on as the golden years of the environmental movement. Environment departments were widely established; an array of toxic materials were removed from use and replaced with less persistent, more benign substances. Control of pollutants discharged to the water, air, or earth began. Immense strides were made. Salmon returned to the Thames, killer fogs were eliminated, smog in Los Angles at least got no worse. In Alberta, almost every major urban center adopted secondary sewage treatment plants, halting gross pollution of rivers and streams. Sulphur emission standards went up from less than 90 percent removal to averages of between 97 and 98 percent. The Eastern Slopes were protected from uncontrolled use and degradation by an enlightened zoning scheme. Public consultation about appropriate uses or mitigation of environmental assaults became the norm.

But with the downturn in the economy in 1983, an ebbing of concern and support began. The reduction of concern was due to a number of elements:

1) The very success of the movement. There were substantial improvements in environmental quality. Falcons, eagles, and gulls began to reproduce again. The air was cleaner, the water clearer. It was time to worry about something new and different: crime in the streets, welfare cheaters, family breakdown.

2) The excesses of the environmental movement. There were those who found that by couching their appeal as one of environmental protection, they could pursue goals that had little to do with the environment. Residential areas made impassioned defenses against traffic, industries, or apartment developments in the name of environmental integrity. There were demands for complete assurance of zero emission or zero risk of breskdowns or accidents, which is inherently impossible. The ultimate absurdity arises when facilities essential to achieve an acceptable environment for all – sanitary landfills and hazardous waste treatment plants – cannot be sited because of the environmental fears expressed by the NIMBY (Not In My Back Yard) syndrome.

3) The reactions against excesses. Because Greenpeace mounted media campaigns to protect non-threatened species (seals) that were well managed, while others agitated for the elimination of chemicals that by and large were responsibly and beneficially utilized (fertilizers in agriculture), it became possible to depict all environmentalists and environmental groups as "radical" or "irresponsible." The difficulty is compounded because Greenpeace's

campaign against whaling or the resistance to the use of persistent pesticides is well founded and supported by responsible environmentalists.

4) Bureaucratization. Because much of the responsibility for environmental protection had been delegated to a bureaucracy, the revulsion against bureaucratic tyrannies, regulations, rules, and nit-picking that developed in the '60s spilled over to environmental agencies. Environment departments, in fact, began to be ground between the upper millstone (those who disliked them because they tried to enforce "unnecessary" emission controls or burdensome regulations) and the nether millstone of environmentalists suspicious that environmental departments were apologists for developers, who would not prosecute for excessive emissions until birds fell out of the skies.

When jobs are scarce and revenues falling it is possible to develop a plausible argument that development is being held back by excessive environmental safeguards. It may even be true. Sanitary landfills or hazardous waste plants have been halted in the name of the environment, though not by environmentalists.

However, environmentalists have frequently opposed developments or supported actions that have proven to be the right or appropriate thing to do. This is not to say that they were never wrong, only to note that they were frequently right. Environmentalists have objected to dams that they felt were excessive or unneeded on the grounds that superior alternatives existed. In the case of many hydro developments, it would have been in the ratepayers' interest to have heeded those objections. Environmental complaints have certainly brought about higher standards of sulphur recovery; though industry initially objected to this as "excessive" and "uneconomic," it has turned out to be economically sound as markets and prices for sulphur have proved more buoyant than those for gas.

The development of a special waste treatment facility, an area where Alberta has now assumed national leadership, illustrates these points. A site for a special waste treatment plant has been found which meets the rigorous physical standards, near a community which welcomes the facility. Though the location does not provide the greatest convenience to the bulk of the generators, the combination of physical suitability and community acceptance is so unique that Alberta will be the first province in Canada to develop a comprehensive special waste treatment facility. Adequate treatment of hazardous wastes is an additional cost to either industry or government. However, the alternative is either the later reclamation of inappropriately located material, or the exposure of people to unacceptable risks from contaminated water or air. Both these alternatives carry even higher costs than effective, comprehensive treatment of special wastes. Alberta's treatment facility is not only economically sound, it can be a positive attraction for enterprises that unavoidably produce hazardous wastes in their operations, and at present have no location in Canada that can provide an assured safe disposal method.

There is no doubt that environmental controls or requirements bring additional private costs. It is certainly cheaper to dump pollutants into the air or water than to treat them. It is cheaper to clear cut in blocks of 10,000 acres than in ones of 100 acres. But do these short-term savings represent a private benefit which exceeds social costs (the costs to the public as a whole)? For that is the way that sound economics views a project. It is immaterial whether the costs (or benefits) are public or private; as long as they exist they should be considered in assessing whether a project is warranted on economic grounds. The benefits, public and private together, should exceed the sum of public and private costs, before a project or program can be considered economically beneficial. Economics is ineffective in providing any guidance on the appropriate distribution of the costs and benefits, because it is immaterial whether it is a public cost for private benefit, or a private cost for private and public benefit. As long as the benefits (whoever or wherever received) exceed costs, the project or program is warranted.

The problem with most environmental programs or requirements is that the costs or the restrictions are immediate and incidence of the cost perfectly clear. Indeed it has been encapsulated as a slogan – "The polluter pays." The benefits, however, are diffuse and possibly distant. The effluent not discharged in a stream costs the potential polluter, but he receives none of the benefit; that is reaped by those downstream and it may be only in the form of slight increment in quality spread over many users. It is only when these benefits accumulate to some visible, dramatic extent, such as the return of salmon to the Thames, that the magnitude becomes clear.

However, there is another way in which the benefit becomes evident and can be precisely identified. That is through the avoidance of lawsuits or exogenous costs by the reduction of pollution, or through environmentally responsible behavior. No company would willingly lay itself open to the potential lawsuits faced by Union Carbide in India. Enlightened self-interest and simple prudence suggest that pollution should be avoided in this litigious age.

It is possible to provide additional illustrations, but the principal point is clear: sound environmental decisions are, concurrently, sound economic decisions. If they are not, they can only be supported on a temporary basis. If an environmental control does not benefit the public through significantly cleaner air, water, or land, then it is probably unwarranted. Certainly a call for zero discharge or zero risk is an indication that the demands are excessive, though there are instances where such demands are justified. It is difficult to identify a safe level for the discharge of dioxin, for example.

The commitment of renewable resources to irreversible or irrevocable uses removes once and for all the opportunity to decide on the best use, now and in the future, of that parcel or water body. By foreclosing on potential future decisions we not only burden our successors with our mistakes, we remove their ability to rectify our errors. A call for a development with irreversible uses is frequently an indication that the proposal is environmentally precarious and economically risky.

A test of the validity of a development is whether it is sustainable, or if not sustainable, is capable of restoring conditions to a level equal to or better than at the commencement of development. The adoption by the Province of the criteria for reclamation of disturbed land to an equal or better level was an excellent developmental benchmark. An equally valid criterion for renewable resources would be sustainability, the ability to produce or harvest on a continuous basis for as far into the future as can be foreseen.

Good environmental decisions are good economic decisions. If they are not, if the private and public benefits do not outweigh the costs, then they are insupportable. The difficulty is that many of the environmental benefits are difficult to measure and frequently extend beyond the jurisdiction where the costs occur. Because of technical problems of measurement, of externality, of option value, environmental benefit tends to be undervalued. For this reason when the cost/benefit equation is close, the advantage should lie with the environment, since environmental benefits are usually undervalued for good technical reasons.

The picture of environmental standards as a costly burden, as an impediment to full employment, as a handicap to international competition, is unfounded and can be refuted. Our most effective international competitor, Japan, has adopted some of the highest standards of environmental quality, in part to rectify some of its early mistakes. However, it competes vigorously in spite of these stringent requirements. Our models for competitiveness should be Japan and northern Europe, where environmental standards are high, rather than southern Europe, the Third World, and Communist countries, where environmental standards are either low or not enforced.

The claim that environmental standards or controls must be lowered in order for Canada or Alberta to compete in world markets is unfounded. My basic message to environmentalists, then, is to welcome the challenge of whether a proposal for environmental conservation is warranted on economic grounds. If the proposal is sound and warranted it should be able to pass the economic test, basically, that all the benefits derived outweigh all the costs incurred. There are difficulties in identifying all the beneficiaries and establishing the extent of benefit, but sound environmental proposals should be able to pass those tests.

Alistair D. Crerar
Chief Executive Officer, Environment Council of Alberta

2. POLICY AND PROGRAM REVIEW

The Council...
...shall conduct a continuing review of policies and programs of the Government....

Section 7(1)(a), The Environment Council Act

The Council is required by the Environment Council Act to carry out an ongoing review of government policies and programs. This is accomplished by several means, including the public hearing process with the subsequent report and recommendations, investigations by research staff, and occasionally through the retention of consultants.

2.1 REVIEW OF AGRICULTURAL LAND BASE POLICY AND PROGRAMS

The Council's review of policy and programs concerning the agricultural land base has been underway for several years. During the course of the review, publications providing background information on particular aspects of the subject have been developed and distributed, and public hearings were held, ending late in 1983. In February of 1984, the Agricultural Land Base Panel began collecting additional information necessary for the preparation of the Report and Recommendations, the culmination of the review process. The Panel attended a series of meetings with federal and provincial agencies, including the British Columbia Agricultural Land Commission. These supplementary meetings concluded in early June and preparation of the report began shortly thereafter. Work on both a summary report and a technical report continued through 1984, and was essentially complete by the year's end. When the reports are completed, the Council's review of agricultural land base policy and programs will be concluded.

The major elements of the Panel's reports have several interrelated aspects:

Local Responsibility: The Panel's view is that land use control should be a local responsibility. At present, development permits and land use bylaws are handled by the municipality. The addition of subdivision approving authority will provide the municipalities with all of the tools required for protecting the agricultural land base. The Panel also recommended that municipalities be given the responsibilities for some smaller industrial surface disturbance activities, under the authority of the Land Surface Conservation and Reclamation Act. The municipalities are recommended to be the final appeal body for the many new responsibilities of their Agricultural Service Boards.

Provincial Support and Supervision: In order to provide a balance to local decision making the Panel recommended the creation, at the Provincial level, of an Agricultural Resources Conservation Board (ARCB). Its role would be to monitor, audit, and report upon municipal and provincial government decisions affecting the agricultural land base. Each year a report would be made to the Legislature on the status of Alberta's agricultural land base. The ARCB would have a strong working relationship with strengthened Agricultural Service Boards. This would be through providing technical and financial support to the Boards as well as through receiving advice from an advisory committee composed of Service Board members. Staffing of the Agricultural Resources Conservation Board is anticipated through reassignment of personnel already working on closely related matters, for example, from within the Conservation and Development, Land Classification, and Soils Branches of Alberta Agriculture.

Agricultural Productivity Compensation Fund: An additional tool to influence decisions affecting the land base is the recommendation to establish an Agricultural Productivity Compensation Fund. This approach recognizes that the agricultural land resource contributes benefits to the economy as a whole as well as to the owner. If such land is lost to other uses, then society should be compensated, for the loss of secondary benefits which are generated through the goods and services required to bring forward production from the land, and for the impact that the subsequent production makes as it is readied for final consumption. The same principle can be found in the 86:14 funding system used for irrigation. Here it is recognized that society benefits on about a six to one ratio when investments are made in irrigation, with the farmer being required to pay 14 percent of the cost while the provincial government contributes 86 percent. When land is removed from agriculture, as indicated by the removal from agricultural assessment, the owner of record of the newly assessed non-agricultural parcel, whether a public or private owner, should contribute an amount equal to six times the agricultural productivity value of the land to the Agricultural Productivity Compensation Fund.

Since the higher the productivity of the agricultural soil the greater the amount required to compensate for its loss, there would be a tendency for non-agricultural development to be directed to poorer quality soils or to lands already removed from agriculture. Funds collected in the Agricultural Productivity Compensation Fund would be used to support agricultural research, since this has been the source of of important increases in soil productivity in the past. However, if sufficient funds accumulated, the Fund could be used to support practices and programs which would permanently replace lost agricultural production. An alternative to contribution to the Fund would be for those who wish to remove agricultural land from production to provide for an equivalent permanent replacement of production elsewhere, with such production being capable of continuous commercial viability. For such a project to qualify, the level of productivity lost would have to be replaced on land presently cultivated, rather than using our limited expansion potential.

Other Recommendations: There are a number of other important recommendations covering additional areas of conservation, maintenance, expansion, and intensification of the agricultural land base. The 29 recommendations of the Panel to the Lieutenant-Governor in Council and the Minister of the Environment are presented in Appendix A.

2.2 STAFF REPORTS

2.2.1 The ERCB: Its Environmental Role and Relationships

This report was put on hold in 1984 due to staff reallocations.

2.2.2 Acid-Forming Emissions – Transportation and Effects

The report *Acid-Forming Emissions – Transportation and Effects* was released in 1984. The report assesses the potential for long-range transport of

acid-forming emissions in Alberta. It concludes that this is not a problem at the moment although it could become one in the future.

2.3 MINISTERIAL REQUESTS

The Minister of the Environment may request the Council to review any aspect of environment conservation.

2.3.1 Clean Air Act and Clean Water Act

The ECA has been reviewing the administration of the Clean Air and Clean Water Acts. That continued in 1984 and the draft documents were extensively reviewed by the Science Advisory Committee and by provincial government agencies. Rewriting is underway, based upon those reviews.

2.4 PUBLIC ADVISORY COMMITTEE ASSISTANCE

Staff provided assistance in the development of PAC resolutions and also participated in PAC's workshop on effectiveness.

Information was provided to the Environment Protection Study Group on the regulatory systems affecting the Willmore Wilderness. The Public Advisory Committees also requested a summary of the Canadian Society of Environmental Biologists symposium on "Decision Making: The Role of Environmental Information," and this was provided.

2.5 PUBLIC ADVISORY COMMITTEE WORKSHOP ON EFFECTIVENESS

A workshop on the effectiveness of the Public Advisory Committees to the Environment Council of Alberta was organized, and held October 19 and 20, 1984 at the Solicitor General Staff College in Edmonton. The purpose of the workshop was to review the role, and effectiveness of the three advisory committees to the Environment Council. Those taking part in the workshop were mainly members of the Co-ordinating Committee, which includes chairmen from the six study groups of the Public Advisory Committee on the Environment as well as from the three advisory committees themselves, and Environment Council staff. The Environment Council's chief executive officer also attended. Recommendations from the workshop have formed an agenda for updating the Public Advisory Committees' approach to their mandate, including some necessary restructuring and rewriting of the Public Advisory Committees' Roles Document. This agenda will be operative over the long term and will be implemented during 1985 and perhaps in subsequent years as well.

Since the workshop was to look at the effectiveness of the Public Advisory Committees, it directed its attention to the objectives of the organization, and

attempted to identify what the most effective ways for achieving those objectives actually are. This could best be accomplished through evaluating past activities and on that basis developing future approaches. When the workshop was able to identify problems that the Public Advisory Committees had been encountering with past practice, alternative future courses of action were raised for discussion and evaluation. A number of these alternatives were adopted as recommendations for future action.

Note: Some confusion has always surrounded the term "PAC" when it is applied interchangeably both to the Public Advisory Committee on the Environment, and to the totality of the Environment Council's three Public Advisory Committees, which includes the Public Advisory Committee on the Environment with its six study groups, the Science Advisory Committee (SAC), and the Environmental Education Advisory Committee (EEAC). During the discussions at the workshop a certain amount of confusion was again present. Until a change is made in the titles used for at least one of entities in that totality, a convention is necessary to distinguish clearly between them. The convention used to date, and which is used here, calls for the Public Advisory Committee on the Environment section to be referred to as "PAC" while the totality of the Public Advisory Committees are termed "PACs". Unfortunately, the distinction in the nomenclature is not sufficient to fully dispel the confusion. An example of an option that might be considered in the rewriting of the Roles Document is to retitle the Public Advisory Committee on the Environment as the Public Environmental Advisory Committee.

Here, as follows, is a summary of the Workshop on Effectiveness. Discussion began on roles and objectives, and led on to the consideration of relationships among the various segments of the entire Public Advisory Committees organization. Recommendations are summarized under the Action and Comments headings under each section.

2.5.1 Role and Objectives of the Public Advisory Committee on the Environment

- to be an advocate for environment conservation
- to provide information about public concerns to both provincial government agencies and to the political system
- to provide advice to the ECA
- to provide information to the public on the concerns and issues being dealt with by PAC
- to recommend to government appropriate program and policy modifications or additions in order to deal with anticipated environmental problems
- to encourage government agencies and the political system to act upon the advice given
- to educate PAC members and constituent groups about environmental issues

- to constructively criticize government actions related to environment conservation
- to receive and deal with concerns of the public and of its constituent organizations

Action and Comments:

In order to accomplish the above there may be a need for both pro-active and reactive approaches. Considerable public exposure may be valuable, perhaps by having meetings in various parts of the province. The above objectives were referred to the Co-ordinating Committee for confirmation and to determine if modification to the Roles Document is necessary.

2.5.2 Role and Objectives of the Science Advisory Committee

- when required to do so, to provide PAC with scientific and technical advice
- to provide scientific and technical advice to government agencies and to the political system
- to provide scientific and technical advice to the ECA
- to review scientific aspects of reports, policies, and programs of the government, as requested
- provide scientific and technical advice to the ECA research group, as requested, through the review of reports, and through recommendations on research priorities
- to monitor and to predict environmental issues and to propose solutions
- to provide scientific and technical advice to the public.

Action and Comments:

SAC is likely to be more reactive than pro-active in its activities. The above objectives were referred to SAC for discussion and revision and to determine if any modification to the Roles Document is necessary.

2.5.3 Role and Objectives of the Environmental Education Advisory Committee

Note: The following is the workshop's perception of the roles and objectives of EEAC:

- to assist PAC and SAC in achieving their objectives which relate to environmental education
- to recommend to government agencies, to the political system, and to the ECA methods for improving environmental communication
- to monitor public concerns and attitudes on environment conservation matters.

Action and Comments:

EEAC should put great emphasis upon identifying and developing the most appropriate means for PAC and SAC to communicate with their respective audiences.

2.5.4 Relationships

This part of the report deals with the relationships among the three public advisory committees, and the Environment Council. A discussion theme was how the various groups could help each other achieve their common goals. A specific discussion of EEAC is not included here as its relationships to the rest of the advisory committee organization is summarized well in Section 2.5.3.

Relationship Between SAC and PAC

SAC is prepared to give scientific advice to PAC when requested to do so. SAC should be considered a facilitator for PAC activities rather than a means to implementation. SAC is also prepared to suggest to PAC aspects of issues which the public should be aware of. If PAC develops a pro-active stance in some issues, early consultation with SAC may assist PAC in reaching its objectives.

PAC and SAC should have a strong relationship, particularly when positions are being established in the various study groups. SAC should be prepared to advise PAC on the scientific implications of their resolutions. However, SAC is not in a position to do research for other advisory committees.

Relationships of the Three Advisory Committees and the ECA

Suggestions were made that the advisory committees could make better use of the resources provided by the ECA, particularly the research staff, the library facilities, and the Council's developing computer capabilities.

Present ECA research programs are mainly derived from the sections of the Act relating to public hearings, policy and program review, and Ministerial inquiries. There is a 60 percent commitment of research staff time to public hearings, which is difficult to change, but there is a desire by the research group at the ECA to do projects within the remaining 40 percent which are advantageous to both ECA and advisory committee objectives.

The ECA has an ongoing commitment to respond to advisory committee requests that it has the capability to handle and which are judged appropriate by both the Co-ordinating Committee and the Council. Draft resolutions will continue to receive technical review by research staff. ECA library facilities are open to PAC members and to the general public.

On the other hand, PAC can assist the ECA by providing it with information on public concerns, by advocating those parts of Reports and Recommendations which it agrees with, and by suggesting studies and programs to be undertaken.

Action and Comments:

1) The suggestion was made that the ECA do an internal review of its operations, in order to determine if better approaches are possible. It was decided to leave this until the results of the effects of this workshop can be assessed. In the meantime the ECA will review the report on the Public Participation Workshop held in March of 1981. If action is required as a result of that review, it will occur.

2) The PAC newsletter is considered to be an important communications tool. It will be revitalized by Liaison Division and publication frequency will increase. In some circumstances the study group may wish the Liaison staff to assist the study group chairman in preparing a news release about the matters discussed at a study group meeting.

3) Another service which the ECA may be able to make available to study group members is information on current media interests. This is done through a clipping service, which is available in the ECA library. It may be possible to distribute this material on an as-required basis, if library availability is not sufficient. Liaison staff will continue to assess this.

4) The ECA Liaison Division will prepare a report to PAC discussing the ECA's communication functions. The report will go to the Co-ordinating Committee for comment. It may also be a useful resource to EEAC if their deliberations are expanded, while EEAC may be able to contribute to the enhancement of communications as well.

2.5.5 Resolutions

Resolutions are one of the mechanisms which the Public Advisory Committees use to reach their objectives. They alert the government to public concerns, stimulate discussion of the issue within the Advisory Committees, and provide policy direction for the Committees. How well resolutions work is not certain and an assessment of their effectiveness is required. Concern was also expressed about a lack of follow-up on resolutions passed in previous years.

Resolutions are developed by PAC with, it is hoped, early input and advice from research staff, and SAC. The present format for resolutions was considered good, but may not be understood by all members. Similarly, discussions revealed that not everyone present at the workshop fully understood the role of the various groups and the information flow pattern. The following is the workshop's agreement on how PAC resolutions should be handled:

1) The PAC study groups prepare the initial resolution with input from any person or agency they feel appropriate, including other advisory committees or research staff.

2) Resolutions are forwarded to the past chairman of the Co-ordinating Committee. The past chairman is responsible for administrative matters, on behalf of the Co-ordinating Committee, throughout the process. The major reason for forwarding resolutions to this committee is to insure good information and communication among all three advisory committees.

3) The resolutions are then forwarded to the Resolutions Committee. Because this is a subcommittee of the Co-ordinating Committee it should insure that time delays are minimal, since the Resolutions Committee should constantly inform the Co-ordinating Committee of the status of resolutions.

4) The Resolutions Committee should have continuous interaction with SAC, EEAC, and ECA research staff about resolution content. These three groups also provide input directly to the study groups on an as-required basis.

5) Ultimately, the resolutions are returned to the Resolutions Committee which is responsible for presentation of the resolutions to the Annual Joint Meeting.

6) Resolutions are voted upon by the PAC membership only. If SAC and EEAC wish to develop resolutions they are free to do so. The mechanisms involved were not established at this workshop.

7) All meeting participants are encouraged to participate in the resolution discussions at the Annual Joint Meeting.

Action and Comments:

1) The chairman of the Resolutions Committee should prepare a description of the resolutions process, confirming the accuracy of the above, as well as a flow chart. This will be forwarded to the Co-ordinating Committee for discussion and ratification.

2) PAC will undertake a review of its past resolutions in order to determine effectiveness and possible improvements.

The discussion on resolutions led to debate on other mechanisms for advocacy. Those identified included: letters, briefs, conferences, plenary sessions, public meetings, demonstrations, meetings with government officials, position papers, review input, PAC newsletter, press conferences, news releases, dear communicator letters, etc. Another question was "how to get input from the government on issues

which it would like the PACs to provide assistance with?" This led to two more action requests under this part of the agenda:

3) The Co-ordinating Committee will pass on to EEAC a list of possible advocacy mechanisms, as in (2) above, with a request for EEAC to comment on their appropriateness, along with suggestions on the circumstances under which each of these mechanisms is most effective.

4) A special discussion paper on potential approaches for PAC to use in order to receive more input from Ministers and government officials is to be considered by the Co-ordinating Committee.

2.5.6 Annual Joint Meeting of the Public Advisory Committees and the ECA

Discussion took place on the purpose of the Annual Meeting, and how it could be improved upon. Discussion centered on timing, using the meeting for discussing future activities, integrating the Annual Meeting with a conference, and the communication potential of the meeting. This all resulted in action decisions addressed below.

Action and Comments:

1) Timing – The normal December meeting, when combined with the summer recess, unnecessarily disrupts the year's activities. It was proposed the Annual Meeting be moved to early June in order to coincide with Environment Week. (This proposal was presented by the Co-ordinating Committee to the November, 1984 Annual Meeting for a decision. It was rejected.)

2) Content – If the Annual Meeting is shifted to Environment Week, other possibilities arise. The meeting could be combined with a conference. By combining these activities, supplemental funding is a distinct possibility, which increases the chances of being able to move the meeting around the province. As well, this format should provide increased exposure on environmental viewpoints to the media. The suggestion was made that cable companies may be interested in filming part or all of the proceedings and using this material to meet their Canadian content requirements.

The second major suggestion made about the Annual Meeting was to use some portion of it for a "brainstorming" or planning purpose. Such a session could be used to identify priorities for the coming year. The Co-ordinating Committee would then be responsible for suggesting which groups are appropriate to deal with the issues identified or to suggest formation of an ad hoc group, if this became necessary.

If the above changes were to occur then the summer recess could be used by the study groups to convert the June discussions into an action plan for presentation to the September meetings. (These suggestions were also presented to the November

Annual Meeting by the Co-ordinating Committee, were accepted in principle and given the rejection of the changed Annual Joint Meeting date, are being modified for inclusion in the present format of the Advisory Committee year.)

2.5.7 Study Groups

This part of the agenda dealt with the appropriateness of the present study group organization, use of ad hoc committees, orientation of new members, training for chairmen, program planning, attendance, media relations, tenure of chairmanship, and the relationship between members and their constituent organizations. As with the previous agenda item, directions were established and decisions made. They are addressed below:

Action and Comments:

1) The present study group structure will be retained. There will continue to be the opportunity to create ad hoc groups when issues warrant. This may be valuable if the Annual Joint Meeting is used for planning.

2) It was the consensus that new members require an information package when they arrive. This "Survival Kit" will be created by Liaison Division and will cover things like: the role and operations of the Public Advisory Committees and the ECA, facilities available to PAC members, how to do expense accounts, membership on their study group, etc.

3) In order to assist new members and chairmen, it was suggested that cardboard place cards be used at the committee and study group meetings. (This has now been implemented.)

4) There are only eight or nine meetings per year for each study group so full advantage needs to be taken of that time. Of concern is the need for follow-up on past activities. Liaison Division will see if leadership and meeting conduct courses are available for interested chairmen. If not, they will see what is involved in setting these up. A report on this is being forwarded to the Co-ordinating Committee with the intent of implementing a program.

5) When study groups are dealing with an issue and guest speakers are attending, it was suggested that whenever possible the various facets should be dealt with in one meeting. This is to enable study group members and the media to deal with an integrated package.

6) Attendance of study group members is a concern for two reasons: (a) at times a quorum is in jeopardy, and (b) constituencies which believe they have representation on the advisory committees may be wrong. The attendance rules are described in the Roles Document. Discussion indicated a reluctance to rigidly enforce those rules, particularly in the context of a volunteer organization, although stronger arguments exist for unaffiliated

members. Liaison Division agreed to review attendance records and report back to the Co-ordinating Committee on their assessment.

7) A common problem for all committee systems is how well members represent and communicate with their constituent organizations. Some members on the advisory committees have mechanisms while others are not so fortunate. It was not immediately apparent how communication flow from constituent groups to members could be improved. However, it was suggested that with the ECA's enhanced computer capability there is considerable potential for improving information flow from the membership back to their constituent groups.

8) It was agreed that chairmanship tenure should remain as in the Roles Document. This is for all committee and study group positions.

2.5.8 Co-ordinating Committee

The above material has concurrently elaborated on the role of the Co-ordinating Committee. It remains, as the name implies, a co-ordination body. However, to the extent that the direction of this workshop is endorsed by the general membership, its role becomes more substantive.

2.5.9 Attendees

Dr. S. Dalton	Mr. J. Shemanchuk	Mr. I. Shaw
Mr. C. Walker	Mr. B. Richardson	Mrs. D. Broadbent
Mrs. B. Hunter	Mr. C. Dunkley	Mr. B. Irwin
Mr. G. Merrick	Dr. C. Wood	Mrs. E. Friesen
Dr. P. Mahaffy	Mr. W. Flook	Dr. M. Kostuch

ECA Staff:

Mr. A. Crerar	Mr. A. Landals	Ms. R. Pretty
Mr. K. Nelson	Mr. D. Buchwald	Mr. J. Lilley

3. PUBLIC HEARINGS

The Council...
...shall, on being requested to do so by an order of the Lieutenant Governor in Council, hold public hearings for the purpose of receiving briefs and submissions....

Section 7(1)(d), The Environment Council Act

3.1 AGRICULTURAL LAND BASE

The terms of reference for these hearings were established by Order in Council 158/82 on February 10, 1982. The Order directed the Council to enquire into means for maintaining and expanding the agriculture land base and for maintaining its production. Public hearings were held in 1983, concluding in December. Work on the report and recommendations arising from these public hearings began in 1984 and was essentially completed at the end of the year (see Section 2.1). Both a technical and a summary report will be published. The summary report was sent for printing in December of 1984; the technical report, which will provide more details and background, will follow early in 1985. The recommendations of the Panel can be found in Appendix A.

3.2 RECYCLING

At the Annual Joint Meeting of the Environment Council and its Public Advisory Committees, held on November 22, 23, and 24, 1984, the Hon. Fred Bradley, Minister of the Environment, announced the next topic for public hearings to be conducted by the Environment Council – recycling. Terms of Reference for these hearings are expected early in 1985.

4. PUBLIC ADVISORY COMMITTEES

The Council...may...
...appoint one or more public advisory committees on environment conservation....

Section 10(a), The Environment Council Act

The Environment Council has three Public Advisory Committees appointed pursuant to the Act. These are the Public Advisory Committee on the Environment, the Science Advisory Committee, and the Environmental Education Advisory Committee. These committees constitute the volunteer arm of the Environment Council and are the main interface between the Government of Alberta and its citizens with regard to environmental matters. One hundred and ninety-seven dedicated individuals are currently members of the three Public Advisory Committees, an increase of nine from the roster of 188 at the end of last year. A list of committee members as of November is presented in Appendix B.

The Public Advisory Committee on the Environment is divided into six study groups, as outlined in the following sections. The text of the annual report from each group, as well as from the Co-ordinating Committee, the Membership Committee, the Science Advisory Committee, and the Environmental Education Advisory Committee, is presented in Appendix C.

4.1 THE PUBLIC ADVISORY COMMITTEE ON THE ENVIRONMENT

The membership of the Public Advisory Committee on the Environment consists of nominees of various organizations, associations, and institutions within Alberta, as well as individuals whose special capabilities are recognized by the Environment Council to be of exceptional value. At the end of the year, 121 organizations were represented, including six which are represented for the first time.

As in past years, the primary function of the Committee lay in the identification and consideration of emergent environmental issues and problems. The Committee issued early warnings, expressed public concerns, and provided advice to Government on a number of these issues.

Items studied during the year included:

Energy conservation efficiency

Municipal energy audits

Energy conservation – public awareness and education

Propane conversion of private automobiles

Fish and Wildlife Policy for Alberta

Willmore Wilderness – recreational and tourist development plans

Wetlands policy

Endangered plant species

Restoration and protection of Kimiwan Lake

Inclusion of the Alberta Wilderness Areas in the World Heritage nomination of the mountain national parks

Analysis of importance of the W.A.C. Bennett Dam on the Peace/Athabasca Delta

Setting of environmental standards for water and air

Use of waste heat from industrial plants for greenhouse operations

Interveners' costs at ERCB hearings

Acid Deposition Research Program

New phasings of Esso Resources Cold Lake Project

Reclamation of gravel mines

Environmental law

Water quality evaluation

Health concerns of the Fort MacKay Band

Biomonitoring the effects of industrial plants, especially pulp mills in rivers

Environmental mediation

Lodgepole enquiry

Proposed revisions to the Wildlife Act

Logging in the Upper Oldman River Basin

Water quality of the South Saskatchewan River Basin

Game ranching in Alberta

Bill 13 – Planning Amendment Act, 1984

Metro Edmonton and Calgary concerns with regard to

- transportation management
- dangerous goods routes
- transit systems
- noise policy
- urban infrastructure maintenance

1988 Winter Olympics

Community planning process

A number of these are ongoing issues and represent continued public concern in these areas. Several of these issues became the subject of formal resolutions at the Annual Joint Meeting. These are reproduced in Appendix D.

4.1.1 The Co-ordinating Committee

Under the chairmanship of Dr. Lub Wojtiw, the Co-ordinating Committee met 10 times in 1984. In August the Committee met with the Hon. Fred Bradley, Minister of the Environment. Frank and informative discussion took place with regard to the following:

- hazardous wastes plant site
- responses to the 1982 Resolutions
- National Committee on Water Quality
- lead in gasoline
- Environment Week
- *Environment Views*
- water quality
- improving public knowledge of environmental issues
- logging in the Upper Oldman
- sewage effluent irrigation

Mr. Bob Cronkhite and Mr. Henry Kroeger of the Alberta Water Resources Commission met with the Committee in October and presented an overview of the future South Saskatchewan River Basin Hearings.

A two-day workshop aimed at improving the effectiveness of the Public Advisory Committees was held on October 19 and 20. This workshop set the direction for a number of changes that will be implemented in 1985.

4.1.2 The Energy Study Group

After several slow years, a revitalized Energy Study Group had a very active and successful year. Membership in the group now stands at 14 and under the chairmanship of Mr. Ian Shaw, the members met eight times during the year.

Meetings were well attended and dealt with topics such as energy conservation efficiency, municipal energy audits, energy conservation – public awareness and education and propane conversion of private automobiles.

The year ended on a sad note for the Study Group with the death of Ian Shaw. Deepest sympathies are extended to his family and friends. His leadership will be missed.

4.1.3 The Environment Protection Study Group

Mr. Bob Richardson was elected Chairman of the group and eight meetings were held during 1984. The group dealt with a number of topics including the Fish and Wildlife Policy for Alberta, tourist development of Willmore Wilderness, and endangered plant species. The major focus of the Study Group during 1984 was wetlands. Two meetings dealt with wetland policy from a number of points of view, including agriculture, legal issues, and fish and wildlife habitat protection. A group of concerned citizens from McLennan made a presentation on Kimiwan Lake as a case study. The Study Group offered a number of suggestions on actions that might be taken to restore and protect this valuable wetland. The Study Group will continue to monitor and assist the activities of the McLennan residents where possible.

4.1.4 The Non-Renewable Resources Study Group

Under the chairmanship of Mrs. Betty Hunter, the Non-Renewable Resources Study Group met eight times during the year. Representatives from the Energy Resources Conservation Board attended the April meeting to discuss interveners' costs. The main concern of the Study Group is the almost prohibitive cost to volunteer groups when presenting briefs at public hearings.

Two meetings dealt with the topic of gravel mining and reclamation. Review of this topic lead to two resolutions concerned with reclamation deposits and royalties (see Appendix D). The Study Group also dealt with acid deposition, the new "phased" Esso Resources Cold Lake Project and had the opportunity to tour the Nova greenhouses at Joffre.

4.1.5 The Pollution Study Group

The Pollution Study Group met eight times under the chairmanship of Mr. Bill Irwin. As in past years, this Study Group discussed numerous issues; however, several were focused on in detail. The Study Group is particularly concerned with monitoring of water quality and devoted several meetings to the topic. Of particular concern is the lack of standard survey procedures for macrobenthic surveys and other water quality testing.

The Pollution Study Group is very interested in health concerns of the Fort MacKay Band. This Study Group will continue to deal with this topic as more

information is available and it intends to explore means of bringing the involved parties together to try and improve the situation.

In addition, the Environmental Law Centre made several presentations dealing with law enforcement and environmental mediation.

4.1.6 The Renewable Resources Study Group

The Renewable Resources Study Group, under the chairmanship of Charlie Wood, met eight times during 1984. Of major interest to the Study Group during the year were changes in the Province's policies concerning wildlife. Attention focused on the Wildlife Policy, the pending changes to the Wildlife Act, and game ranching. The Study Group is concerned with game ranching and has requested further clarification on a number of points.

Logging in the Upper Oldman continued to be an area of concern.

Water resources, especially in the South Saskatchewan River Basin, received considerable attention and will continue to be an issue for further study.

4.1.7 The Urban Environment Study Group

Dr. Lochan Bakshi again chaired the Urban Environment Study Group. Membership and interest in the Study Group increased considerably during the year and the eight meetings held were well attended.

The Study Group continued to focus on concerns of the two metropolitan areas and examined such issues as transportation management, dangerous goods routes, transit systems, noise, community planning, the 1988 Olympics, and maintaining the urban infrastructure. This last topic of the urban physical plant became the focus of one of the workshops at the Annual Joint Meeting.

The Urban Environment Study Group is still concerned with the creation of a Quiet Communities Directorate. This concern has once again been brought to the Minister's attention.

4.2 THE SCIENCE ADVISORY COMMITTEE

Under the Chairmanship of Dr. Dixon Thompson, the Science Advisory Committee met on four occasions during 1984. In order to reduce the time spent in meetings, the Science Advisory Committee has adopted several changes. An executive committee has been elected to conduct business and make decisions between formal meetings. Members of the broader scientific community have participated as "consulting associates" to work on specific issues. This ensures inclusion of the necessary expertise to provide sound scientific advice on the wide range of environmental issues of concern to the Science Advisory Committee.

During 1984, nine draft documents were subjected to confidential peer group review by members of SAC. A number of changes to these documents resulted from the excellent scientific advice provided. Documents reviewed included *Hazardous Waste Guidelines*, the Radiation Protection Act, *Acid-Forming Emissions – Transportation and Effects*, *Managing Air Quality in Alberta*, *Water Quality Management in Alberta*, *The Energy Resources Conservation Board: Its Environmental Role and Relationships*, *Policing Pollution: The Enforcement of Environmental Protection* and *Crimes Against the Environment*.

Two sub-committees were formed during the year to deal with the broad topics of water and wildlife. These persistent topics continue to present numerous issues of concern to the Science Advisory Committee and work will continue in these areas.

4.3 THE ENVIRONMENTAL EDUCATION ADVISORY COMMITTEE

Eight meetings were held in 1984 under the chairmanship of Dr. Julian Guay.

The major accomplishment for the year was the Environment Week Conference held in Red Deer. This conference, on "Communicating Environmental Trends," was jointly hosted by the Environmental Education Advisory Committee and Alberta Environment. The conference was well attended and well received.

Two resolutions dealing with the history of the environmental movement in Alberta and an annual Environment Week conference were formulated as a result of the conference (see Appendix D).

The Committee reviewed a number of issues, including establishment of a provincial environmental education center.

As a result of the Effectiveness Workshop held in October, the Environmental Education Advisory Committee agreed to broaden its membership to include individuals with background in communication and detailed knowledge of various organizations involved in the delivery of environmental education programs.

4.4 RESOLUTIONS FROM 1983

Responses of the various government departments to the 1983 resolutions were again consolidated by the Office of the Minister of Environment. These responses were forwarded to the Council at the end of August and, subsequently, several of the Study Groups have sent follow-up correspondence seeking further clarification. The complete text of the responses received appears in Appendix E.

Past resolutions were a topic of discussion of all of the Study Groups. It was agreed that resolutions of the past five years would be reviewed as a basis for evaluating what progress has been made in this regard. It is expected that additional correspondence will be generated with regard to updates on past resolutions.

4.5 THE ANNUAL JOINT MEETING

The 1984 Annual Joint Meeting of the Environment Council of Alberta and its Public Advisory Committees was held November 22, 23, and 24, 1984.

4.5.1 Location and Attendance

This year, in keeping with financial restraint, the Annual Joint Meeting was held at the Riviera Motor Hotel in Edmonton. A chartered bus from Lethbridge, with stops in Calgary and Red Deer, provided transportation for those members from southern Alberta.

4.5.2 Program

The theme of this year's conference and meeting was "The Environment in Recession." Proceedings from the Annual Joint Meeting are available from the Council's Library under separate cover.

4.5.3 Resolutions

Following their normal practice, individual Study Groups presented resolutions to the plenary session of the Annual Joint Meeting. Seven resolutions were presented, one from the Pollution Study Group and two each from the Environment Protection Study Group, the Non-Renewable Resources Study Group, and the Environment Education Advisory Committee. The resolutions, as ratified at the Annual Joint Meeting, appear in Appendix D.

4.5.4 New Officers

Dr. Sheri Dalton of Edmonton was acclaimed Chairman of the Public Advisory Committees for 1985. She succeeds Dr. Lubomir Wojtiw, also of Edmonton, who as Past Chairman will serve as head of the Resolutions Committee. Mr. Bob Richardson of Calgary was acclaimed Vice-Chairman, succeeding Dr. Sheri Dalton, and will head the Annual Joint Meeting Planning Committee for 1985.

5. OTHER ACTIVITIES OF THE ENVIRONMENT COUNCIL

5.1 THE CANADIAN ENVIRONMENTAL ADVISORY COUNCILS

The chairmen of the Canadian Environmental Advisory Councils met in Ottawa on December 17, 1984. The Environment Council of Alberta was represented by the Chief Executive Officer.

Due to fiscal restraint, a full assembly was not held in 1984; however, the desirability of meeting in 1985 was agreed to. This meeting is proposed for Quebec, with Alberta as an alternate.

5.2 INFORMATION PAMPHLETS

Requests for information about the Environment Council come from the public fairly frequently. It became apparent some time ago that an updated pamphlet about the ECA was required, which could explain the Council's mandate, its operations, and its services. Most people were interested in knowing either about the ECA itself, or about the Public Advisory Committees, or about the ECA's approach to public hearings. In order to provide the information people wanted in an easy-to-use form, it was decided that three pamphlets should be produced. The first of these, on the Public Advisory Committees to the ECA, was produced in 1982. In July of 1983, the pamphlet on the ECA itself was completed. Then, during the public hearings on the agricultural land base in the autumn of 1983, the Council's pamphlet on the general organization and format of its public hearings was released. Together, they provide a reasonably thorough explanation of the Council's services, its operations, and its relationships both to the public and the government. Separately, these pamphlets each convey information about an important part of the Council's mandate. Copies can be obtained by contacting the Council's Library by either phone or mail.

5.3 REVIEW OF LAW REFORM COMMISSION PUBLICATIONS

The Environment Council is one of the review agencies for this organization. Two of their draft reports were commented upon in 1984. The reports are: *Crimes Against the Environment* and *Policing Pollution: The Enforcement of Environmental Legislation.*

6. ADMINISTRATION

The administration division is responsible for providing services to the Environment Council in the areas of accounting, budgeting, editing, library, messenger, office management, personnel, print procurement, and purchasing.

The Environment Council occupies the 8th floor, Weber Centre, 5555 Calgary Trail Southbound N.W., Edmonton.

6.1 FISCAL REPORT

Funds for the operation of the Environment Council are provided under Alberta Environment's Vote 8 – Overview and Co-ordination of Environment Conservation. These funds are transferred to the Council from the Department of Treasury on a monthly basis, and with the exception of salaries, are deposited in the Council's bank account at the main branch of the Canadian Imperial Bank of Commerce, Edmonton. Cheques are issued directly by the Council for payment of all accounts. During 1984, a total of 965 cheques were issued.

With the operation of its own bank account, the Council operates at arm's length from the Alberta Government; however, the financial statements are audited by the Office of the Auditor General. The financial statements as of March 31, 1984 follow.

ENVIRONMENT COUNCIL OF ALBERTA

FINANCIAL STATEMENTS

MARCH 31, 1984

Auditor's Report

Balance Sheet

Statement of Capital Surplus

Statement of Operations and Operating Surplus

Notes to the Financial Statements

ALBERTA LEGISLATURE

OFFICE OF THE AUDITOR GENERAL

AUDITOR'S REPORT

To the Chief Executive Officer of the
Environment Council of Alberta

I have examined the balance sheet of the Environment Council of Alberta as at March 31, 1984 and the statements of capital surplus and operations and operating surplus for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Council as at March 31, 1984 and the results of its operations for the year then ended in accordance with the disclosed basis of accounting, considered appropriate in the circumstances, as described in Note 2 to the financial statements applied on a basis consistent with that of the preceding year.

F.C.A.
Auditor General

Edmonton, Alberta
October 29, 1984

Statement A

ENVIRONMENT COUNCIL OF ALBERTA

BALANCE SHEET

AS AT MARCH 31, 1984

	1984	1983
ASSETS		
Current:		
Cash	$407,550	$560,616
Fixed:		
Office equipment, at cost	82,120	81,746
Less: Accumulated depreciation	56,472	58,907
	25,648	22,839
	$433,198	$583,455
LIABILITIES AND SURPLUS		
Current:		
Accounts payable	$ 20,209	$ 16,281
Surplus:		
Capital, Statement B	25,648	22,839
Operating, Statement C	387,341	544,335
	412,989	567,174
	$433,198	$583,455

The accompanying notes are part of these financial statements.

Statement B

ENVIRONMENT COUNCIL OF ALBERTA

STATEMENT OF CAPITAL SURPLUS

FOR THE YEAR ENDED MARCH 31, 1984

	1984	1983
Balance at beginning of year	$22,839	$29,665
Add: Office equipment purchased from operations	12,860	528
	35,699	30,193
Less: Depreciation for the year	7,381	7,354
Disposal of equipment at net book value	2,670	-
	10,051	7,354
Balance at end of year	$25,648	$22,839

Statement C

ENVIRONMENT COUNCIL OF ALBERTA

STATEMENT OF OPERATIONS AND OPERATING SURPLUS

FOR THE YEAR ENDED MARCH 31, 1984

	1984	1983
Revenue:		
Contributions by the Province of Alberta	$1,367,934	$1,497,819
Expenditure:		
Salaries	837,296	714,141
Travelling	208,956	146,880
Fees and commissions	108,457	67,551
Printing	102,080	139,928
Employee benefits	79,038	65,096
Equipment rental	36,498	22,301
Advertising	36,156	14,479
Stationery, office supplies and postage	33,199	44,279
Equipment purchases	12,860	528
Library	6,795	7,826
Wages	6,497	12,340
Hall rentals	6,185	1,398
Telephone	4,904	5,351
Miscellaneous	2,151	688
	1,481,072	1,242,786
Settlement of claim	43,856	-
	1,524,928	1,242,786
Surplus (deficit) for the year	(156,994)	255,033
Operating surplus at beginning of year	544,335	289,302
Operating surplus at end of year	$ 387,341	$ 544,335

ENVIRONMENT COUNCIL OF ALBERTA

NOTES TO THE FINANCIAL STATEMENTS

MARCH 31, 1984

Note 1 Authority

The Environment Council of Alberta operates under the authority of the Environment Council Act, Chapter E-13, Revised Statutes of Alberta 1980.

Note 2 Significant Accounting Policies and Reporting Practices

These financial statements have been prepared in accordance with generally accepted accounting principles except that fixed assets have been charged to expense at date of acquisition. In addition, the cost of fixed assets acquired has been credited to Capital Surplus. Depreciation on a straight line basis has been charged to Capital Surplus.

Note 3 Administration Expenses

Office furniture and accommodation are provided to the Council at no cost by the Province of Alberta and accordingly are not reflected in these financial statements.

Note 4 Approval of Financial Statements

These financial statements were approved by management.

6.2 PERSONNEL

The number of full-time permanent salaried positions was reduced from 27 to 25 during the year as a result of downsizing in the Public Service.

All permanent salaried positions are under the purview of the Public Service Commissioner and the regulations issued by the Personnel Administration Office are applicable. Non-management and non-excluded staff are members of the Alberta Union of Provincial Employees.

The Council wishes to acknowledge the retirements of Bernice Conklin, Bill Flook, and Jean McCoy and the untimely death of Peggy Thompson.

Other staff changes during the year include:

a) one transfer to another department;
b) three transfers in from other departments;
c) two in-service promotions;
d) the classification level of one position changed.

6.3 LIBRARY SERVICES

The responsibilities of the Environment Council of Alberta Library are:

1) to provide information and background material to support projects of the Council and its research staff;
2) to provide a source of environmental information for the general public;
3) to manage and distribute all Environment Council publications.

The library contains 6,568 books and government documents and subscribes to 134 periodicals and eight newspapers. The collection also includes an extensive file of newspaper clippings on environmental matters, maps, and a selection of general reference material.

6.3.1 Services to the ECA Staff

Loans to Council staff (excluding periodicals):	311
Periodical loans to Council staff:	475
Reference questions answered:	586
Material borrowed from other libraries (interlibrary loans):	322

6.3.2 Services to the Public

Inquiries received by phone, letter, or personal visits:	462
Interlibrary loans to the public and other agencies:	36
Loans of the film *Tomorrow's Bread* :	5

6.3.3 Publications

During the year, the library was responsible for the distribution of a large number of publications and brochures.

Acid-forming Emissions – Transportation and Effects	1,774
1983 Annual Report	557
Public Advisory Committee Annual Report	200
Agriculture Reports	4,314
Miscellaneous Publications	2,655
Total distributed	9,500

A complete list of Environment Council publications is appended to this report (Appendix F).

The ECA mailing list was revised and updated, and consisted of 12,858 addresses at the end of 1984:

General list:	1,461 addresses
Agriculture list:	2,452 addresses
Total of all other lists:	8,945 addresses

Convenient local access to Environment Council information is available at a total of 47 depository libraries or "Information Centres" located throughout Alberta. A list of the Information Centres may be found in Appendix G. Transcripts of public hearings have a more limited distribution; these may be viewed at the locations listed in Appendix H.

6.4 EDITING SERVICES

1984 saw the publication of two reports, *Acid-Forming Emissions – Transportation and Effects*, and *Maintaining and Expanding the Agricultural Land Base in Alberta: Summary Report and Recommendations*. The editing section staff worked in conjunction with the research division on draft manuscripts of several other reports that were still in preparation at the end of the year.

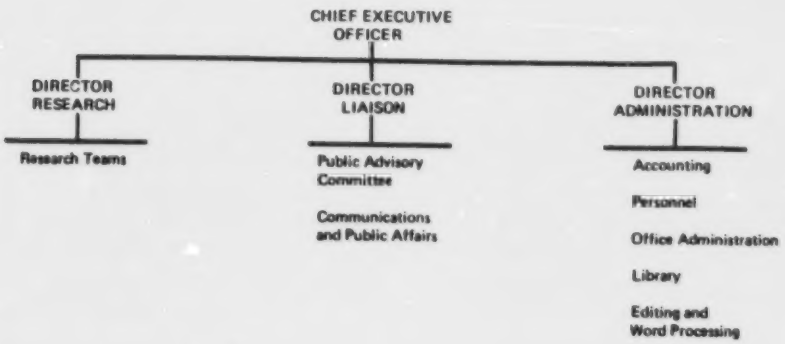
The report on acid-forming emissions incorporated a survey form that asked readers to volunteer their opinions of the report by returning a postage-paid card. While the responses received were interesting and varied, the response rate (1.5 %) does not allow us to assume that they apply to our readership as a whole.

Maintaining and Expanding the Agricultural Land Base: Summary Report and Recommendations is a summary of the report and recommendations of the Agricultural Land Base Panel. It is scheduled for public distribution early in 1985, and will be followed by the publication of a background document presenting the Panel's report in more detail.

Not directly related to the publishing of reports was the work that the Editing Section staff undertook as part of the office automation program that was developed and carried out in 1984. This program resulted in the acquisition of an IBM Displaywriter word processor and a software package that allows for the electronic transfer of draft reports from other sections to editing. This interconnection of equipment has enabled us to process a normal workload despite staff cuts.

As is usual, one publication had to be reprinted during the year because of continuing demand. This was *Noise in Alberta: Report and Recommendations.*

6.5 ORGANIZATION OF THE ECA



1. **CHIEF EXECUTIVE OFFICER** - Exercises the power of the council and performs the duties and functions of the council, and is a member and Vice-Chairman of panels constituted by the Lieutenant-Governor in Council.
2. **DIRECTOR, RESEARCH** - Directs research officers and is responsible for the scientific activities of the council.
3. **DIRECTOR, LIAISON** - Directs assistance to the Public Advisory Committees; responsible for communications, public relations, and public affairs.
4. **DIRECTOR, ADMINISTRATION** - Directs and supervises the administrative systems—financial, accounting, personnel, editing, and word processing functions.

7. APPENDICES

APPENDIX A. RECOMMENDATIONS ON MAINTAINING AND EXPANDING THE AGRICULTURAL LAND BASE

Recommendation 1

That an Agricultural Resources Conservation Board be established, reporting to the Minister of Agriculture and charged with responsibility on behalf of the Government of Alberta for the conservation, maintenance, and enhancement of the agricultural land base.

Recommendation 2

That the responsibility for the maintenance of the agricultural land base rest with the rural municipalities of Alberta. The responsibility to protect the agricultural land base should be accompanied by the power and authority necessary to achieve this objective.

Recommendation 3

In the identification of the appropriate growth options for major roads, utilities, and the expansion through annexation of residential, commercial, and industrial developments, the regional planning commissions should develop benefit/cost analyses of the alternatives that consider not only the cost to the urban centers but the costs to the economy as a whole of the various alternatives for development.

Recommendation 4

That the location of feedlots and intensive agricultural operations be a matter of municipal control under land use bylaws.

Recommendation 5

The agricultural production lost when land is removed from agriculture should be replaced either by support of agricultural research and development or by practices and programs which would permanently replace the lost production.

Recommendation 6

Future additional country residential lots can be accommodated with a minimal impact on the agricultural land base, if the suggested guidelines are followed.

Recommendation 7

Municipalities should be urged to collect information on the cost of providing services to various types of uses in different areas of the municipality relating to different levels of existing and proposed infrastructure.

Recommendation 8

That an agricultural land use classification be developed that identifies the ability of the soil to be continuously utilized for different types of agriculture without major degradation.

Recommendation 9

That there be provision for the establishment of "Soil Reclamation Districts" whereby two-thirds of the landowners within defined boundaries may determine the remedies necessary to arrest soil degradation and/or reclaim lands presently subject to degradation. Within Soil Reclamation Districts, constant dollar or low-interest loan funding should be available to help carry out remedial measures, with repayment to be compatible with benefits derived.

Recommendation 10

That the Planning Act and Regulations be amended to provide for the implementation of rural replotting schemes.

Recommendation 11

This Panel supports the recommendation in the report on soil conservation by the Standing Committee on Agriculture, Fisheries, and Forestry, to the Senate of Canada, reading

That the Canadian Wheat Board modify the quota system to extend (a) full quota entitlement, at the "bonused" level of seeded acreage, to those remnant farmlands considered of marginal value for agriculture; and (b) partial quota entitlement, equivalent to current quota levels for summerfallow, to extensive tracts of unimproved pastureland which form integral parts of farm units.

Recommendation 12

The Panel believes that the method of calculating coverage and payouts should be neutral as between planting on summerfallow or stubble. Since there are many technical details and complications in achieving this objective, the Panel calls on the Canada-Alberta Crop Insurance Corporation to give this matter their urgent consideration.

Recommendation 13

An agricultural development permit, issued by the Agricultural Service Board, should be required to clear or break land. Permits could identify special conditions under which clearing or breaking should take place.

Recommendation 14

That the rural municipality be given the responsibility for reclamation not dealt with under the Land Surface Conservation and Reclamation Act's regulated surface disturbances provisions. This proposal is not intended to replace direct negotiation between the applicant and the landowner for right of entry.

Recommendation 15

That the Government of Alberta work toward the removal of all intergovernmental barriers to free trade in beef, whether at the feeder cattle or finished stage. Particular attention should be paid to indirect barriers, including excessive levels of subsidy to develop beef cattle industries.

If, after fully canvassing the potential for free trade in beef at the provincial, national, and international level, the conclusion on potential expansion is negative, the Government of Alberta should institute special beef marketing programs. These might include special transportation assistance to market beef in new market areas, additional research on new forms of beef products, packaging, processing, transportation, and storage, and continuing follow-up and reassessment of existing programs and initiatives.

Recommendation 16

Export marketing of grass and forage products should involve product-oriented task groups representing each element in the chain from producer to consumer.

Recommendation 17

That research be carried out to provide more information on the maintenance of and amendments to Alberta agricultural soils.

Recommendation 18

That a research fund be established to study soil reclamation and effects of industry on agriculture. This fund could be developed by contributions from industry, matched by government.

Recommendation 19

Research should be carried out on an ongoing basis to study the long term effects of agricultural chemicals on soils.

Recommendation 20

More funding for production research should be provided, and there should be a closer liaison between provincial and federal research institutions. Producers should be encouraged to contribute to research funding through a levy on sales of production.

Recommendation 21

That more research into grass and forage production be carried out, particularly into methods of increasing yields per acre.

Recommendation 22

That Agricultural Service Boards be encouraged to act as a practical research liaison within their jurisdiction in determining local research needs and in planning and managing projects.

Recommendation 23

That a research project be instituted to identify the full range of benefits and costs of various government incentive and subsidy programs on the sectors of the agricultural economy that they were intended to assist, as well as on other parts of agriculture and the larger economy.

Recommendation 24

Provincial programs of expansion and intensification should be assessed and priorized on the basis of the following guidelines.

Recommendation 25

That northern agricultural land base expansion be limited to the fringes of existing agricultural settlements until more is known about potential expansion areas.

Recommendation 26

A Range Management Agreement should have a 20-year term renewable in the tenth year. Any increment of grazing capacity that was due to good management by the lessee, or range improvements carried out at the lessee's cost, should accrue to the lessee, even if this were to exceed the existing 600 animal unit limitation on size.

Recommendation 27

Grazing reserve expansion should be restricted to those cases where a grazing association indicates its willingness to undertake all costs of maintenance and operation. The responsibility for maintenance and operation of existing reserves should be turned over to local grazing associations as quickly as possible.

Recommendation 28

That all land and buildings used for primary food production that are annexed to an urban municipality be treated for assessment purposes as though they had remained in the rural municipal jurisdiction, accompanied by municipal service levels similar to those of the rural municipality, until these lands are converted to a use other than agriculture.

Recommendation 29

That greenhouse buildings and land be assessed as agricultural for municipal tax purposes.

APPENDIX B. PUBLIC ADVISORY COMMITTEE MEMBERSHIP LISTS

(as of November 1984)

Public Advisory Committee on the Environment

Sponsoring Organizations and Representatives

Alberta Association of Architects ..... Mr. F. Walicki
Alberta Association of Canadian Institute of Planners ..... Mr. C. Walker
Alberta Association of Landscape Architects ..... Mr. K.G. Carson
Alberta Association of Municipal Districts and Counties ..... Mr. S. Shwetz
Alberta Association of Registered Nurses ..... Mrs. S. Henderson
Alberta Beekeepers Association ..... Mr. R.D. McKenzie
Alberta Chamber of Commerce ..... Dr. A. Lamb
Alberta Chiropractic Association ..... Dr. R. Gehrke
Alberta Federation of Labour ..... Mr. R.E. Nielsen
Alberta Fish and Game Association ..... Mr. H. Fauser and Mr. G. Merrick
Alberta Forest Products Association ..... Mr. A. Rytz
Alberta Institute of Agrologists ..... Dr. R. Cairns
Alberta Irrigation Projects Association ..... Mr. G.T. Dudley
Alberta Lung Association ..... Mrs. D.J. Lewoniuk
Alberta Medical Association ..... Dr. C. Hankins
Alberta Motion Picture Industry Association ..... Ms. L. Miller
Alberta Motor Association ..... Mr. M.J. Colledge
Alberta Oil Sands Industry Environmental Association .... Mr. S.E. Stephansson
Alberta Pharmaceutical Association ..... Mrs. J. Roschlaub
Alberta Public Health Association ..... Mr. B. Alleyne
Alberta Research Council ..... Dr. C. Wood
Alberta School Trustees Association ..... Mrs. M. Stephenson
Alberta Trappers Central Association ..... Mr. J. Wooders
Alberta Urban Municipalities Association ..... Alderman C. Reid
Alberta Wheat Pool ..... Mr. P. Dobson
Alberta Wilderness Association ..... Mr. J. Eisenhauer
Alberta Women's Institute ..... Mrs. M. Goodwin
Archaeological Society of Alberta ..... Mr. G.F. Paschen
Association of Professional Engineers,
Geologists and Geophysicists of Alberta ..... Mr. J.E. Staples
Calgary Chamber of Commerce ..... Mr. A. Chanin
Calgary Local Council of Women ..... Mrs. S. Nelson Pier
Canada West Foundation ..... Mr. D.K. Elton
Canadian Association of Re-Refiners ..... Mr. R. Kalmacoff
Canadian Institute of Forestry ..... Dr. P. Woodard
Canadian Institute of Public Health Inspectors
(Alberta Branch) ..... Mr. W. Irwin
Canadian Manufacturers' Association ..... Mr. A.M. Woffard
Canadian Meteorological and Oceanographic Society
(Alberta Centre) ..... Dr. L. Wojtiw

Canadian Nature Federation . . . . . Ms. M. Posey
Canadian Petroleum Association . . . . . Mr. G. Stewart
Canadian Society of Environmental Biologists . . . . . Mr. A. Garbutt
Canadian Water Resources Association (Alberta Chapter) . . . . . Mr. G. Sykes
Chemical Institute of Canada – Canadian Society of Chemical Engineers
(Calgary Section) . . . . . Mr. D.A. Gemmill
Christian Farmers Federation . . . . . Mr. A. Wierenga
Citizens for Public Justice . . . . . Mrs. J. Krabbe
City of Calgary . . . . . Ms. J. Lewin
City of Camrose . . . . . Mr. D. Myrehaug
City of Drumheller . . . . . Mr. R. Romanetz
City of Edmonton . . . . . Mr. K.O. Higginbotham
City of Fort McMurray . . . . . Alderman P. Van Belle
City of Grande Prairie . . . . . Mr. E.G. Radbourne
City of Leduc . . . . . Mr. M. Fitzpatrick
City of Lethbridge . . . . . Alderman W.R. Cousins
City of Lloydminster . . . . . Mrs. J. Sloan
City of Medicine Hat . . . . . Mr. J. Hirsch
City of Red Deer . . . . . Mr. D. Lawrence
City of St. Albert . . . . . Mr. D. Fraser
City of Wetaskiwin . . . . . Mr. N. Carlson
Coal Association of Canada . . . . . Dr. J.B. Railton
Cold Lake Community Advisory Committee . . . . . Mr. D. Appleby
Community Planning Association of Alberta . . . . . Ms. A. Parkinson
Consumers' Association of Canada . . . . . Mrs. E.S. Hunter and Mrs. M. Lutz
Council of Alberta Rural Ratepayers' Associations . . . . . Mr. J.C. Finlay
Edmonton Chamber of Commerce . . . . . Mr. G. Cameron
Electric Utility Planning Council . . . . . Mr. J. Prostebby
Energy Resources Conservation Board . . . . . Mr. E.R. Brushett
Entomological Society of Alberta . . . . . Mr. J.A. Shemanchuk
Federation of Alberta Naturalists . . . . . Mr. H. Gardner
Foothills Protective Association . . . . . Ms. L. Allison
Ft. Saskatchewan Regional Industrial Association . . . . . Mr. R.W. Lutz
Girl Guides of Canada, Alberta Council . . . . . Mrs. T.F. Clement
Grande Prairie Chamber of Commerce . . . . . Mr. B. MacDonald
Health Unit Association of Alberta . . . . . Mrs. L. Feltham
Law Society of Alberta . . . . . Mr. D.R. Thomas
Lloydminster Chamber of Commerce . . . . . Mr. J. Weaver
National and Provincial Parks Association of Canada
(Calgary/Banff Chapter) . . . . . Mr. A.C. Dunkley
National and Provincial Parks Association of Canada
(Edmonton Chapter) . . . . . Dr. G. Swinnerton
Northern Alberta Association
of Biological Science Technicians . . . . . Mr. B. Kolenosky
North Western Fishing Co-op . . . . . Mr. S. Linington
Outdoors Unlittered . . . . . Mrs. E. Keller
Save Tomorrow Oppose Pollution (STOP) . . . . . Mr. B. Staszenski

Sierra Club of Alberta . . . . . Ms. P. Kariel
Southern Alberta Environmental Group . . . . . Ms. M. Bailey
Strathcona Industrial Association . . . . . Mr. T. Lau
Unifarm . . . . . Mrs. E. Friesen
United Farmers of Alberta Go-operative Ltd. . . . . Mr. N.J. White
United Grain Growers Limited . . . . . Mr. A. Dickson
University Womens' Club of Edmonton (Canadian Federation of University Women) . . . . . Mrs. P. Reschenthaller
Urban Development Institute of Alberta . . . . . Dr. D.E. King
Weed Control Research Society of Alberta . . . . . Dr. M. Hussain
Western Stock Growers' Association . . . . . Mr. E. Jarvis
Women of Unifarm . . . . . Mrs. K. Russell

Educational Institutions and Representatives

Athabasca University . . . . . Dr. T.S. Bakshi
Canadian Union College . . . . . Dr. P. Ramalingam
Concordia College . . . . . Dr. S. Dalton
Fairview College . . . . . Mr. J. Lickacz
Grande Prairie Regional College . . . . . Dr. J. Snyder
Keyano College . . . . . Mr. P. Rudiak
Lakeland College – Vermilion Campus . . . . . Dr. M.H. Chaudhry
Lethbridge Community College . . . . . Mr. B. Meller
Medicine Hat College . . . . . Dr. R.K. Shaw
Mount Royal College . . . . . Dr. K. Cummins
Mount Royal College Students' Association . . . . . Mr. G. Lane
Northern Alberta Institute of Technology . . . . . Dr. W. Buchta
Olds College . . . . . Mr. R.A. Hill
Red Deer College . . . . . Mr. G. Fabris
Southern Alberta Institute of Technology . . . . . Mr. D.A. Clarke
University of Alberta . . . . . Prof. H. Madill and Mr. P.N.D. Seymour
University of Alberta Students' Union . . . . . Mr. K. Langhorn
University of Calgary . . . . . Mr. W.A. Ross
University of Lethbridge . . . . . Dr. J. Campbell

Non-Sponsored Members

The current list of unaffiliated members follows:

Mrs. S. Abercrombie
Mr. K.J. Blom
Mrs. D. Broadbent
Mr. W.D. Broughton
Mr. K. Driver
Mr. D. Dube
Mr. W.A. Flook
Dr. G.C.D. Griffiths
Ms. J. Hedenstrom
Dr. M. Kostuch
Mr. E. Kure
Mrs. B. Paschen
Mr. R.M. Richardson
Mr. W.K. Ross
Dr. R. Scace
Mrs. L. Scraba
Mr. I.D.F. Shaw
Mr. R. Whistance-Smith

Science Advisory Committee Members

Dr. C.B. Beaty
Dr. C.F. Bentley
Dr. H. Buckmaster
Dr. S. Dalton
Dr. R.W. Davies
Prof. P. Dranchuk
Ms. L. Duncan
Dr. W.A. Fuller
Dr. J. Hackler
Ms. L.P. Horstman
Dr. R.K. Lane
Dr. A. Laycock
Dr. P. Mahaffy
Dr. R. Nursall
Dr. R.P. Pharis
Dr. W.E. Phillips
Dr. E. Prepas
Dr. D. Thompson
Dr. W.H. Vanden Born
Dr. T.S. Veeman
Mr. W.D. Wishart

Environmental Education Advisory Committee Members

Dr. L. Bakshi
Ms. S. Banks
Mr. B. Batycky
Mr. E. Berndt
Dr. L. Fenna
Mrs. J. Finlay
Mrs. C. Gardner
Dr. J. Guay
Mrs. K. Habberfield
Mr. R. Ireland
Mr. J. Robertson

APPENDIX C. ANNUAL REPORTS OF THE PUBLIC ADVISORY COMMITTEES

CO-ORDINATING COMMITTEE

Report from the Chairman – Dr. Lub. Wojtiw

The Co-ordinating Committee of the Public Advisory Committees met nine times in 1984. A variety of issues were presented to the Committee by the Study Groups, SAC, and EEAC. Some of the issues included: logging in the Upper Oldman River Basin, EEAC recommendation of PAC awards, hazardous waste plant, national committee on water quality, lead in gasoline, water quality, technical reviews, advocacy/mediation/restitution, Environment Week, and the Annual Joint Meeting. A lengthy discussion was held on SAC's involvement in confidential document reviews for government agencies and departments and how this practice might reflect on the credibility of PAC as a public volunteer organization. It was resolved that:

a) on a confidential basis, SAC would continue to perform peer reviews of technical reports for government departments including the ECA;

b) PAC, as a representative body of the public, would review only documents which can be made available to the public when they are received;

c) that any documents received by PAC which are stamped "confidential" will be referred to the ECA for handling.

It was also restated that the Co-ordinating Committee meetings held at the ECA offices will be open to the public.

The Co-ordinating Committee attempted to meet with various ministers and chairmen of the Alberta Government to discuss policies. After numerous attempts, the Committee finally met with the Minister of the Environment, the Hon. Fred Bradley, and with the Chairman and the Executive Director of the Water Resources Commission, Mr. Henry Kroeger and Mr. Bob Cronkhite.

The meeting with the Hon. Fred Bradley took place at the Alberta Legislature in August and lasted two hours. The meeting was very informative with frank discussions on topics dealing with the hazardous waste plant site, responses to the 1982 resolutions, national committee on water quality, lead in gasoline, Environment Week and *Environment Views*, water quality, improving public knowledge of environmental issues, logging in the Upper Oldman River Basin, and sewage effluent. Many positive suggestions on environmental topics were expressed by the Co-ordinating Committee members to the Minister for his consideration. The Minister indica-

ted that the responses to the 1983 resolutions would be sent to PAC within two weeks, and he also indicated that he would attempt to meet with the Co-ordinating Committee on a more frequent basis than he had to date in 1984. Both the Minister and the Committee members welcomed the open discussions presented at the meeting, and these can be attributed to (a) the location of the meeting, and (b) the absence of news media. It is suggested that a future meeting of the Committee be conducted at the Alberta Legislature, away from the ECA offices, to stimulate open communication with the Minister.

The meeting with Mr. Henry Kroeger and Mr. Bob Cronkhite was held in October. At this meeting the two gentlemen updated the Committee on projects the Water Resources Commission had undertaken, and outlined the proposed South Saskatchewan River Basin hearings to be conducted in 10 locations throughout the Basin from November 6 to December 12, 1984. The Alberta Water Resources Commission was requested by the Government of Alberta to hold public hearings into the management and use of the waters of the South Saskatchewan River Basin. Following the conclusion of these public hearings, the Commission will document its findings and prepare a report and recommendations for the government. The Commission is seeking input from the public regarding three main policy issues: (a) which water uses will have priority, (b) how will water be managed to support these uses, and (c) how will the Red Deer, Bow, and Oldman rivers contribute water to meet Alberta's commitment to Saskatchewan? The policy decisions on these issues will provide the foundation for Alberta's future water use and management strategy. Hence, it is important that viewpoints, opinions, and concerns of the public, citizens' groups, associations, local and regional authorities, companies, and others be presented to the Commission.

The Co-ordinating Committee reviewed nine resolutions; some of these were passed with minor suggestions, while others were returned to the Study Groups for further refinement because of ambiguity in the wording.

The Co-ordinating Committee meetings were well attended by the Chairmen, and the Committee had a busy and successful year – concluding with a working retreat in October to discuss the organization, structure, relationships, and future direction of PAC. The discussions, results, and recommendations of this retreat will be discussed at the Annual Joint Meeting.

At the 1983 Annual Joint Meeting, concerns were expressed about the low membership in the Energy Study Group and it was suggested that maybe this group should be dissolved. I am pleased to report that several members have now been transferred to the Study Group and that this group has been very active in 1984. During the year, I attended numerous meetings of the various Study Groups and Committees and found these meetings very stimulating and active. Many of the meetings were very well attended, with speakers making excellent presentations. The successes of these meetings are mainly due to the hard work of the Chairmen and the ECA staff, and I would acknowledge and thank these people for their efforts in 1984. A very special thanks to Ms. Randy Pretty and her staff for all their

help and effort which enabled the Co-ordinating Committee, the Study Groups, SAC, and EEAC to function smoothly.

Last, but not least, I wish to thank Dr. Sheri Dalton for organizing the Annual Joint Meeting. This is a very time-consuming effort and without this commitment the Annual Joint Meeting would not be the success it is.

Dr. Lub. Wojtiw
Chairman, Co-ordinating Committee

Members of the Co-ordinating Committee

Dr. L. Wojtiw – Chairman
Dr. S. Dalton – Vice-Chairman
Mr. J. Shemanchuk – Past Chairman and Resolutions Committee
Mr. I.D.F. Shaw – Energy Study Group
Mr. R.M. Richardson – Environment Protection Study Group
Mrs. E.S. Hunter – Non-Renewable Resources Study Group
Mr. W. Irwin – Pollution Study Group
Dr. C. Wood – Renewable Resources Study Group
Dr. L. Bakshi – Urban Environment Study Group
Dr. D. Thompson – Science Advisory Committee
Dr. J. Guay – Environmental Education Advisory Committee

MEMBERSHIP COMMITTEE

Report from the Chairman – Mr. Archie Landals

For the year 1984 your Membership Committee consisted of Dr. Lochan Bakshi and Mr. Bill Irwin. Mr. W.A. Flook was the chairman of this Committee until his retirement in July, when the new Director of Liaison, Mr. Archie Landals, accepted this responsibility.

A meeting was held on May 30, and a number of more routine matters were settled by a telephone conference between the chairman and the Committee members on August 24.

The membership list was under constant review throughout the year and updated lists were issued in February, May, August, and November.

During the year the following 24 members resigned from PAC:

Mr. D. Abbey
Mrs. M. Abdurahman
Mr. K.J. Blom
Dr. F. Kozar
Mrs. B. Laychuk
Prof. A.R. Lucas

Mrs. P. Campbell
Mr. E.B. Cunningham
Mr. A. Emes
Mr. J. Glazier
Mr. R. Hawkesworth
Dr. K.W. Hodgins
Mrs. C. Hooks
Prof. H. Knowles
Dr. C.W. Konschuh
Mr. H.G. Lunty
Mr. D. Marshall
Dr. D.H. Norrie
Mr. R. Paul
Mr. T. Priddle
Mr. A. Smith
Prof. J.J. Spitzer
Alderman R.D. Tarleck
Mr. D. Teichroeb

To all of these public-spirited volunteers, as well as Dr. B.P. Dancik and Dr. R.W. Davies who resigned from SAC and Mr. G. Doherty, Mr. R. Mrazek, Mr. B. Plesuk, Mr. D. Stoker, and Ms. S. Washington who left EEAC, we wish to tender our sincere thanks for their services and best wishes for success in their future endeavors.

Six new associations were added to the growing list of PAC constituents and they supplied members as follows:

Canadian Association of Re-Refiners – Mr. R. Kalmacoff
Community Planning Association of Alberta – Ms. A. Parkinson
City of Fort McMurray – Alderman P. Van Belle
City of Leduc – Mr. M. Fitzpatrick
Southern Alberta Environmental Group – Ms. M. Bailey
Weed Control Research Society of Alberta – Dr. M. Hussain

STOP has once again become an active group and has decided to reactivate their membership in PAC. Mr. Brian Staszenski has been appointed as their representative.

The Environmental Education Advisory Committee added:

Mrs. J. Finlay
Mrs. K. Habberfield
Mr. R. Ireland
Mr. J. Robertson

and to all of these new members we wish to offer a sincere welcome.

Each year a number of members whose terms expire are willing to undertake an additional term of service. We feel especially indebted to these public-spirited people and our congratulations and compliments are therefore offered to the following on their reappointment:

Mr. D. Appleby
Dr. C.F. Bentley
Mr. D.A. Clarke
Mr. K. Driver
Mr. H. Fauser
Dr. G.C.D. Griffiths
Dr. J. Guay
Ms. P. Kariel
Mr. E. Kure
Mr. G. Lane
Mr. G. Merrick

New members added to the unaffiliated members' roster were:

Mr. K.J. Blom	Mr. W. Flook
Mrs. B. Paschen	Mr. R. Whistance-Smith

One hundred and twenty-one separate organizations are represented on PAC. At the end of the year, the roster stood at 197 members including alternates, unaffiliates, members of SAC, and members of EEAC. Of these, 21 were members of the Science Advisory Committee, 12 were members of the Environmental Education Advisory Committee, 18 were unaffiliated members, and 36 were alternates.

Following numerous unsuccessful attempts to obtain representatives from the following organizations:

Alpine Club of Canada
Calgary Eco-Centre Society
Canada Jaycees
Independent Petroleum Association

a motion was carried at the May 30 meeting that these associations be eliminated from PAC.

Mr. Archie Landals
Chairman, Membership Committee

ENVIRONMENTAL EDUCATION ADVISORY COMMITTEE

Report from the Chairman – Dr. Julian Guay

The Environmental Education Advisory Committee was quite busy in 1984, meeting a total of eight times.

1) At our January meeting, Mr. Jim Martin, Head of Environmental Education at Alberta Environment, was the guest speaker. The idea of a joint environmental conference between EEAC and Alberta Environment was explored.

2) At the February meeting, a tentative agenda and budget were brought forward by Mr. Bill Batycky and Mrs. Joy Finlay for a joint environmental education conference to be held in June 1984 in Red Deer.

3) At the March meeting, Dr. Lois Fenna presented a proposal for a Provincial Environmental Education Centre (PEEC).

4) During the April meeting, a proposal for PAC awards was initiated by Ms. Sally Banks and Mr. Graham Doherty. It is hoped that the PAC awards may become an accepted form of recognition in Alberta.

5) At the May meeting, the final arrangements were completed for the joint conference, "Communicating Environmental Trends," to begin Environment Week '84.

6) At the June meeting, Mr. Ken Nelson presented an overview of the successful Environmental Education Conference held in Red Deer, June 1-3, 1984.

7) During the September meeting, Dr. Lois Fenna made an additional slide presentation on her proposal to establish a Provincial Environmental Education Centre.

8) In October, the EEAC held their meeting at the Fish Creek Provincial Park and toured the Shannon Terrace Environmental Education Centre.

The highlight for the EEAC in 1984 was the joint conference held with Alberta Environment. The Minister of the Environment, Hon. Fred Bradley, responded very favorably to the conference, which kicked off Environment Week '84. The Minister responded favorably to the idea of a similar joint conference for Environment Week '85.

As a result of the joint conference on communicating environmental trends, the following two resolutions were forwarded to the Resolutions Committee:

Be It Resolved:

THAT, in conjunction with Environment Week each year, a public conference continue to be sponsored by Alberta Environment, and organized jointly with the Public Advisory Committees of the Environment Council of Alberta.

Be It Resolved:

THAT a history of the environmental movement in Alberta, and an assessment of its accomplishments, is urgently needed, and that Alberta Environment now take the lead role by initiating and/or funding aspects of this work through its Environmental Education Resources Branch.

Once again it has been a very active year for the Environmental Education Advisory Committee. I would like to thank all the members of the EEAC for their excellent efforts. The success of the EEAC is the result of the tasks being both initiated and completed by several different members. I should like to thank the Chairman of the Co-ordinating Committee, Dr. Lub. Wojtiw, for his attendance at many of the EEAC meetings.

A very special thanks to Randalin Pretty for her assistance which enabled the EEAC to function smoothly.

Dr. Julian Guay
Chairman, Environmental Education Advisory Committee

Members of the Environmental Education Advisory Committee

Dr. J. Guay – Chairman
Dr. L. Bakshi – Representing Urban Environment Study Group
Ms. S. Banks
Mr. B. Batycky
Mr. E. Berndt
Mr. D. Clarke – Representing Energy Study Group
Mr. G. Doherty*
Mr. C. Dunkley* – Representing Non-Renewable Resources Study Group
Dr. L. Fenna
Mrs. J. Finlay
Mrs. K. Habberfield
Mrs. C. Gardner
Mr. R. Ireland
Mr. G. Lane* – Representing Pollution Study Group
Mr. R. Mrazek*
Mr. B. Plesuk*
Mr. J. Robertson
Mr. T. Shewchuk* – Representing Renewable Resources Study Group
Mr. D. Stoker*
Ms. S. Washington*

* No longer on EEAC

SCIENCE ADVISORY COMMITTEE

Report from the Chairman – Dr. Dixon Thompson

SAC has had a busy year. Meetings were held February 13, April 9, June 4, and October 16. Two complementary, evolutionary changes have been taking place. One is a change in structure and practice which will reduce the amount of time spent in meetings. The second is an increased emphasis on scientific issues of substance. SAC is moving to stress the *scientific advisory* component of our role and to play down the committee aspect.

In terms of minor structural changes, SAC has opted to take advantage of two systems which have been used to a limited degree in the past: an executive committee, and "consulting associates."

SAC has moved to an executive committee structure so that the number of business meetings can be reduced and so that decisions can be made effectively between meetings. Of course, executive committee decisions would be ratified at the following meeting of SAC. Dr. Peter Mahaffy has been elected as the Vice-Chairman, and the three executive committee members are Dr. Sheri Dalton, Robert Lane, and Terry Veeman.

SAC has also made greater use of the broader scientific community within the Public Advisory Committees and the general scientific community within the province. This has in part been necessitated by the nature of the review work (discussed below) which SAC has undertaken. It is not possible to include all the expertise necessary for the provision of good scientific advice on a committee with limited membership. The use of "consulting associates" is consistent with the Roles Document and past practice. A list of those who have been recruited appears below.

SAC's membership has undergone the following changes: during the past year, Dr. B.P. Dancik and R.W. Davies have resigned from SAC and no new members were appointed.

At the 1983 Annual Joint Meeting, I suggested to the Minister, the Hon. Mr. Bradley, that he challenge the Public Advisory Committees, and the Science Advisory Committee in particular, by seeking their advice or asking them to do specific tasks. That suggestion was taken up by the Minister, and others, and SAC eventually received nine draft documents for review. The issue of review of draft documents stirred a minor controversy about confidentiality.

Peer review of draft documents, on a confidential and frequently anonymous basis, is an extremely important part of the normal scientific processes which attempt to control and improve the quality of scientific publications. Review and consultation *before* publication is much more constructive and productive than criticism after a document is published. SAC therefore, as a *scientific* advisory body, felt that confidentiality was an important component of their role as an effective review body. Draft documents are, by definition, not in their final form. Therefore, it is unfair to the author or agency producing the draft to table a draft and thus make it a public document, or to discuss the review with the press. While such policies would create difficulties for PAC because it is a *public* advisory body, SAC discussed but did not sustain such concerns in spite of attempts at sensationalization by the *Edmonton Journal*.

The first draft document received for review was that on hazardous waste guidelines, from the Department of Environment. Very extensive comments were submitted. That document is now under revision.

The Alberta Workers' Health, Safety and Compensation Department requested comments on a draft revision of the Radiation Protection Act.

The Research Staff of the ECA produced four documents which SAC scrutinized. *Acid-Forming Emissions – Transportation and Effects* has been published by the ECA. Documents *Managing Air Quality in Alberta, Water Quality Management in Alberta,* and *The ERCB: Its Environmental Role and Relationships* are under revision. The ECA also received two working papers from the Law Reform Commission of Canada which were passed on to SAC for comment: *Policing Pollution: The Enforcement of Environmental Protection,* and *Crimes Against the Environment.* The Law Reform Commission has received the reviews.

Twelve people from outside SAC were recruited to review drafts: Dr. F.L. Jackson, Dr. R.C. Von Borstel, Dr. D.F. Biggs, Dr. Eric Tollefson, Dr. Charlie Wood, Mr. Dave Gemmill, Dr. Steve Hrudy, Prof. Phil Elder, Dr. Allan Legge, Dr. Bill Ross, Prof. Connie Hunt, and Dr. Margaret Russell. Dr. Keith Hage reviewed the Monenco report on the Lodgepole blowout that was prepared for the Pollution Study Group. SAC members Linda Duncan, Ron Davies, and Harvey Buckmaster also reviewed drafts.

SAC has formed sub-committees to deal with two broad topics which have arisen persistently during the last year or two at least: wildlife and water.

Ms. Louise Horstman has accepted the chair of the sub-committee on wildlife issues, which will include predator control (grizzlies, wolves, and coyotes) and the Fish and Wildlife Policy which the Government introduced this year (see below).

Mr. Gary Sykes has been seconded from the Renewable Resources Study Group to chair the sub-committee on water issues which could include the Slave River Dam, water quality, drainage, and other matters. Their immediate concerns are presentations to the Inquiry on Federal Water Policy, and the SSRBPP (South Saskatchewan River Basin Planning Program) Hearings held by the Alberta Water Resources Commission (see below).

These sub-committees will continue to seek assistance and receive comments and advice. They will report in 1984 and continue working until they see fit to dissolve themselves.

SAC has addressed other issues. There have been discussions of technologies for the disposal of hazardous wastes, the controversy over logging in the upper Oldman watershed, and Harvey Buckmaster has taken on the role of a one-man task force to look into the issue of the possible use of nuclear power in the tar sands (see below).

One significant problem still faces the Committee: the clarification of the Roles Document to remove confusion about Public Advisory Committees, PAC, and SAC. SAC can and should play a specific role, distinct from those of the other public advisory groups. However, both inside and outside the ECA and its advisory groups, there is not a clear understanding of what that distinct role would

be, and what sorts of activities, such as confidential reviews of draft documents, are acceptable. SAC is working to establish a sound reputation as a credible source of scientific advice. (Detailed discussion on roles was held at the Effectiveness Workshop on October 19-20 with recommendations to be brought forward for deliberation at the Annual Joint Meeting.)

The Science Advisory Committee could not operate without the support of large numbers of people. I would like to thank the support staff and the research staff of the ECA for their ongoing help. Our ability to function at all depends upon their continued support. Those SAC members who have had to resign for various reasons deserve a vote of appreciation for the time and effort they donated. To that long list of consulting associates who reviewed one or more documents so willingly, our thanks. SAC's ability to establish and maintain credibility will depend heavily on such continued assistance from Alberta's scientific community. Finally, to the new Executive Committee, I want to take this as the first official opportunity, outside SAC meetings, to wish you welcome and to express my thanks.

I would like to renew the invitation to the Minister to use SAC for its designated role: the provision of scientific advice. We will make every effort to see that that advice is sound and objective. SAC is certainly willing to continue its science advisory role with the ECA and the research staff. The Study Groups have not availed themselves of the kind of assistance that SAC could provide, if requests are timely. To the extent possible, given limited time and resources, SAC may even be able to provide assistance to other groups but we must reserve the right to limit the number of obligations we accept.

It has been 12 years since the first annual report of the Science Advisory Committee was submitted. Since that time SAC and the Alberta scientific community have gained experience and the latter has grown considerably in size. With improved skills and a broader knowledge base, we hope that SAC will play an increasing role in anticipating and avoiding environmental problems, and in providing advice and resolving controversies.

Dr. Dixon Thompson
Chairman, Science Advisory Committee

Wildlife Sub-Committee

Report from the Chairman – Ms. Louise Horstman

A spate of government policies on wildlife and related topics prompted the formation of a Wildlife Sub-Committee to review and provide input to these policies. A number of persons having the appropriate expertise outside of SAC were invited to join or contribute to the Sub-Committee. Government biologists are being consulted for background information and studies. Under review at present are: (a) The Fish and Wildlife Policy (1984), (b) Alberta Agriculture coyote control

policy (revised 1984), (c) revisions to The Wildlife Act (to be tabled in Spring, 1985), (d) draft policy on game ranching, (e) current grizzly bear management policy, and (f) draft policy on wolf control. Because of the early stage of development of some of these policies, it is anticipated that the work of the Sub-Committee will continue throughout 1985.

Ms. Louise Horstman
Chairperson, Wildlife Sub-Committee

Sub-Committee on Water

Report from the Chairman – Mr. Gary Sykes

On October 10, the Sub-Committee on Water made a brief presentation to the inquiry on federal water policy in Calgary. The main point of the presentation was to request that the door be left open for the submission of a more detailed written brief at a later date, although four areas of research justifying greater federal support were also outlined. Dr. Peter Pearse, the inquiry chairman, responded that such a brief will be accepted. He also requested that this brief address specific ways and means by which the federal government should support research.

On October 16, Mr. Gary Sykes was formally seconded from the Renewable Resources Study Group to chair the Sub-Committee on Water. The Sub-Committee is now working towards presenting briefs to both the federal inquiry and the Alberta Water Resources Commission's hearings on the South Saskatchewan River Basin. Other water issues will be addressed as they arise.

Mr. Gary Sykes
Chairman, Sub-Committee on Water

Ad Hoc Committee on Nuclear Power

Report from the Chairman – Dr. Harvey Buckmaster

Background – In 1977 AECL issued a report (AECL-5682) entitled *A Cost Comparison of Nuclear and Fossil Power for the Alberta Tar Sands* which explored the economic feasibility of using a 3,000 MW(t) CANDU organic-cooled nuclear reactor to produce a high pressure (15 MPa), 340 C steam requirement to extract bitumen from tar sands located at depths as great as 700 m for a 20 Gg/day production plan. This was done by attempting to compare the capabilities and operating costs of such a plant with a comparable coal-fired unit under a variety of economic scenarios. AECL has also issued a further study in 1982 (AECL-7677) which extends this analysis in collaboration with Alberta Power Limited, Nova, and Petro Canada. This latter document was reviewed for the ECA by Mike Kelly, Research Officer, later in 1982. SAC has been monitoring development on this

subject since that time, but no report has been written since the changing economic environment has diminished the urgency to respond to this important societal issue.

Analysis – The AECL reports are deficient in a number of areas since they ignore the following very important economic, political, and technical problems:

- The creation of disposal sites in Alberta which are of the requisite standard for radioactive wastes with a 250,000 year half-life.
- The decommissioning of nuclear plants.
- The accident insurance for nuclear plants during their construction, operation, and decommissioning cycles and for the nuclear waste disposal sites.
- The adequate analysis of the risks involved.
- The demonstration that this option is the most efficient using net energy analysis when all costs are considered.
- The demonstration that this option satisfies critical societal and environmental net benefit analysis.

Furthermore, these reports are based upon a number of questionable assumptions concerning the optimum methodology for the extraction of that portion of the tar sands not amenable to surface extraction, the relative price in energy and environmental impact terms of the various fossil fuels that can be used in steam generating plants, the policies of the Alberta Government concerning the uses of these fossil fuels, the political acceptability of nuclear energy in Alberta, the optimum matching of steam consumption and production required, and research and development costs of such projects.

The Ad Hoc Committee will continue to monitor all development concerned with the application of nuclear energy for all purposes in Alberta. It would be pleased to receive comments and responses on any aspect of this problem.

Dr. Harvey Buckmaster
Chairman, Ad Hoc Committee on Nuclear Power

Members of the Science Advisory Committee

Dr. D. Thompson (Chairman) – Faculty of Environmental Design, University of Calgary
Dr. C.B. Beaty – Department of Geography, University of Lethbridge
Dr. C.F. Bentley – Department of Soil Science, University of Alberta
Dr. H. Buckmaster – Department of Physics, University of Calgary

Dr. S. Dalton – Concordia College
Dr. B.P. Dancik* – Department of Forest Science, University of Alberta
Dr. R.W. Davies* – Department of Biology, University of Calgary
Prof. P. Dranchuk – Department of Mineral Engineering, University of Alberta
Ms. L. Duncan – Environmental Law Centre
Dr. W.A. Fuller – Department of Zoology, University of Alberta
Dr. J. Hackler – Department of Sociology, University of Alberta
Ms. L. Horstman – Canadian Society of Environmental Biologists
Dr. R.K. Lane – Environment Canada
Dr. A. Laycock – Department of Geography, University of Alberta
Dr. P. Mahaffy – Department of Chemistry, King's College
Dr. R. Nursall – Department of Zoology, University of Alberta
Dr. R.P. Pharis – Department of Biology, University of Calgary
Dr. W.E. Phillips – Department of Rural Economy, University of Alberta
Dr. E. Prepas – Department of Zoology, University of Alberta
Dr. W.H. Vanden Born – Department of Plant Science, University of Alberta
Dr. T.S. Veeman – Department of Economics, University of Alberta
Mr. W.D. Wishart – Fish and Wildlife Division, Alberta Energy and Natural Resources

* No longer on SAC

ENERGY STUDY GROUP

Report from the Chairman – Mr. Ian Shaw

At the annual conference held in Banff last year, this Study Group requested the membership of PAC to consider its future due to an active membership so small that it rendered viable meetings impracticable. The members of PAC requested that we should carry on as a Study Group in preference to merging with another group as in the past. I am very pleased to report that as of this date we have 14 members and our attendance at meetings is usually at least half our numbers. Our success is due to in no small measure to the Membership Committee Chairman, Mr. Bill Flook, who directed new members in our direction and facilitated the transfer of present members of other Study Groups.

By the end of this year, the Study Group will have held eight meetings. Two of these were field trips: we went to Joffre, Alberta to see the greenhouses that use waste heat from the Nova Corporation ethylene plant located nearby; another trip was arranged to view a passive solar home in Edmonton. Four meetings involved guest speakers:

Mr. John Owens, Consultant in Energy Related Research and Development, spoke on energy conversion efficiency.

Mr. Al Burnard of TransAlta Utilities, spoke on the subject of municipal energy audits.

Mr. Ian Burn, Director, Energy Conservation Branch, Alberta Energy and Natural Resources, spoke on energy conservation – public awareness and education.

Mr. Stan Woychuk, Fleet Representative, Inter City Gas Corporation spoke on propane conversion re: private automobile owners.

All of these speakers presented very interesting and useful information which can be referred to in future deliberations of our group.

To complete our year we have a meeting on December 7. We have held our election of officers for 1985 and I am pleased to advise that Mrs. Anna Parkinson will be Chairperson and Mr. Don Clarke will continue as Vice-Chairman.

This has been a year in which we have tried to rebuild our membership and I am pleased to note we have progressed in this direction. Our year's program was established at our first meeting in February and it was decided that the member who suggested an issue would be responsible for developing the topic and arranging for a speaker. I believe we can say this procedure proved successful.

As retiring Chairman, I wish to express my sincere thanks to all our members who faithfully attended the meetings and contributed to our programs. I also wish to thank the staff of the ECA for their help and co-operation in making this group viable again; in particular, Bill Flook, Randalin Pretty, and Ken Nelson. I also wish to extend a welcome to Archie Landals, and wish him success as our new Director of Liaison.

Mr. Ian Shaw
Chairman, Energy Study Group

Members of the Energy Study Group

Mr. I.D.F. Shaw (Chairman) – Unaffiliated
Mrs. S. Abercrombie – Unaffiliated
Mr. G. Cameron – Edmonton Chamber of Commerce
Mr. D.A. Clarke – SAIT
Mrs. J. Finlay*† – Outdoors Unlittered
Mrs. M. Goodwin – Alberta Women's Institute
Mr. R. Ireland* – YWCA
Ms. E. Keller – Outdoors Unlittered
Mr. G. Lane – Mount Royal College, Students' Association
Prof. H. Madill – University of Alberta
Ms. A. Parkinson – Community Planning Association of Alberta

Mrs. B. Paschen – Unaffiliated
Mr. W.A. Ross – University of Calgary
Prof. J. Spitzer* – University of Lethbridge
Mr. J.E. Staples – Association of Professional Engineers, Geologists and Geophysicists of Alberta
Mr. S.E. Stephansson – Alberta Oil Sands Industry Environmental Association
Mr. R.D. Tarleck* – City of Lethbridge
Mr. C. Walker – Alberta Association, Canadian Institute of Planners

* No longer on Study Group
† Attended Study Group as Alternate

ENVIRONMENT PROTECTION STUDY GROUP

Report from the Chairman – Mr. Bob Richardson

At the November 1983 meeting, Mr. R.M. (Bob) Richardson was elected Chairman and Mrs. Dorothy Broadbent was elected Vice-Chairperson of the Environment Protection Study Group.

This Study Group met on eight occasions during 1984. The 1984 program covered a wide range of subjects including the following: fish and wildlife policy, Willmore wilderness, wetlands policy, endangered plant species, protected areas/ecological reserves, and methods to improve the effectiveness of the study group. In addition, the Study Group continued to monitor the following areas: Slave River hydro project, Olympic sites development and the Eastern Slopes policy.

Guest speakers have been featured at five meetings to date. There were no guest speakers at the January and May meetings due to last- minute scheduling problems on the part of speakers, nor at the October meeting which the group decided should be devoted to a discussion of methods to improve the effectiveness of the Study Group. The subjects of the five meetings which featured guest speakers were as follows:

1) February 22: "Fish and Wildlife Policy for Alberta." Mr. Dennis Surrendi, Assistant Deputy Minister, Fish and Wildlife Division, Alberta Energy and Natural Resources spoke to the group. This was a joint meeting with the Renewable Resources Study Group, covering the proposed Fish and Wildlife Policy for Alberta.

2) March 19: "Willmore Wilderness – Recreational and Tourist Development Plans." Ms. Colleen Grosse and Mr. Stan Wall, Chamber of Commerce, Grande Cache, Alberta presented Grande Cache proposals for tourist development in the Willmore Wilderness and the surrounding area.

3) April 16: "Wetlands Policy." Mr. Stan Bell, President of Unifarm and Mr. Walter McNary, Unifarm, Water Resources Committee discussed the subject from the farm owner's viewpoint; and Mr. Cal Brandley, Legal Department, Alberta Agriculture discussed the legal issues involved.

4) June 22: "Endangered Plant Species." Mr. Gren Lucas, Royal Botanic Gardens, Kew, England, discussed endangered plant species and the climatological effects of large-scale destruction such as occurs in the clearing of rain forests for agricultural purposes.

5) September 17: "Wetlands Policy." Mr. Arni Goodman, Chief of Assessment, Enforcement and Habitat, Canadian Wildlife Service and Messers. Ron Weatherill and Ken Crutchfield of the Habitat Protection Section of the Fish and Wildlife Division, Alberta Energy and Natural Resources, discussed the importance of wetland habitat protection, which is shrinking at an alarming rate, and the federal and provincial programs to encourage the maintenance of wetlands.

The Study Group prepared one resolution in 1984. This resolution requests the Government to include the designated wilderness areas of Alberta in their proposal to seek World Heritage Status for the four mountain national parks. This would increase the importance of the wilderness areas in the eyes of the general public and raise their status in the eyes of the Alberta Government, thus increasing the likelihood of preservation of the wilderness areas for future generations.

Efforts to convince the Mackenzie River Basin Committee to undertake a systematic analysis of the ecological data relating to the impacts of the W.A.C. Bennett Dam on the Peace-Athabasca Delta, in order to provide background information to more accurately assess the effects of the proposed Slave River Hydro Project continued, but have been fruitless to date.

As Chairman of the Study Group, I wish to express my sincere appreciation to the active members who have supported the program over the past year and specifically my Vice-Chairman, Dorothy Broadbent. I wish to gratefully acknowledge the support and guidance of the ECA staff, particularly Randalin Pretty, Bill Flook, and Archie Landals, in making 1984 another constructive year for the Environment Protection Study Group.

Mr. Bob Richardson
Chairman, Environment Protection Study Group

Members of the Environment Protection Study Group

Mr. R.M. Richardson (Chairman) – Unaffiliated
Ms. M. Abdurahman* – Health Unit Association of Alberta

Mrs. L. Allison – Foothills Protective Association
Mrs. D. Broadbent – Unaffiliated
Dr. R. Cairns – Alberta Institute of Agrologists
Mr. A. Chanin – Calgary Chamber of Commerce
Mrs. T.F. Clement – Girl Guides of Canada
Mr. G. Fabris – Red Deer College
Mrs. L. Feltham – Health Unit Association of Alberta
Dr. R. Gehrke – Alberta Chiropractic Association
Mr. J. Glazier* – Alberta Association of Municipal Districts and Counties
Mrs. M. Goodwin* – Alberta Women's Institutes
Mr. E. Jarvis – Western Stock Growers' Association
Mrs. P. Kariel – Sierra Club of Alberta
Mr. B. Kolenosky – Northern Alberta Association of Biological Science Technicians
Mrs. J. Krabbe – Citizens for Public Justice
Mrs. B. Laychuk* – Calgary Local Council of Women
Mr. R.D. McKenzie – Alberta Beekeepers' Association
Mr. R.E. Nielsen – Alberta Federation of Labor
Mr. R. Proudfoot* – NAIT
Mrs. K. Russell – Women of Unifarm
Dr. R. Scace – Unaffiliated
Mr. P. Seymour – University of Alberta
Mr. S. Shwetz – Alberta Association of Municipal Districts and Counties
Dr. G. Swinnerton – National/Provincial Parks Association Canada (Edmonton Chapter)
Mrs. D. Whitenett* – Alberta Women's Institutes

* No longer on Study Group

NON-RENEWABLE RESOURCES STUDY GROUP

Report from the Chairman – Mrs. Betty Hunter

Since the 1983 Banff conference, our Study Group has held seven meetings, one of them a field trip. The eighth is planned for October 2, 1984.

On January 10, 1984 we had expected to have a representative from the ERCB, a meeting that agency had requested. There was no time to plan an alternative so we had a "housekeeping" meeting:

- Discussion of responses to our 1982 resolutions.
- Conduct of our yearly joint conference of ECA and PAC.
- Possible additional programs for 1984.

This proved an interesting meeting. Our discussions and suggestions were productive.

Our February meeting was on government standards. Speakers were from the Department of Environment: Mr. John Defir, Director of Standards and Approvals Division, and Mr. Serge Dobko, Air Quality Branch of the same division.

Mr. Defir emphasized the mechanisms and considerations used in setting environmental standards, particularly water quality standards, which were first set in 1952, borrowing from California criteria. These are separated into specific areas: man's use of water (surface), agriculture's, forestry's, and industry's use of water. These standards are constantlv updated. At present, input is solicited from the ERCB, industry, and the federal government. Mr. Dobko used slides to illustrate a brief history and background of present air quality standards and guidelines. Discussion and question period followed.

In view of our interest in the fate of the remaining provincial wilderness areas, our members were provided with the Wilderness Areas Act. As another Study Group is also interested in this topic, ours will do nothing further at this time.

Our March 6 meeting was a joint field trip with the Energy Study Group. A tour of the Noval Technologies Limited greenhouse at Joffre (a small town on Highway 815 east of Blackfalds and Red Deer) was an enjoyable and most informative session. Waste heat from the compressor of the nearby plant is used and the chief crops produced are tomatoes and long "English" cucumbers. These are retailed under the brand name of "Prairie Sun".

We also saw an interesting "pilot" project – 250,000 (one-quarter million) white spruce seedlings eight inches high. These were grown for the B.C. forest services to be used in reforestation. Our guests and guides were Mr. Tim Ellis and Mr. Barry McPercival from Noval Technologies. Many interesting handouts (even recipes) were bonuses.

"Interveners' Costs" was our April topic. We welcomed not one but three speakers from the ERCB: Mr. Vern Millard, Mr. Mike Bruni, and Mr. Ed Brushett. Our concern had been the almost prohibitive cost to volunteer groups when presenting briefs at public hearings (or inquiries). The three gentlemen outlined their policies and reasons for same. A lively question period followed. We later received the booklet G-31 *Guidelines for Interveners.*

On Tuesday, May 1 we had our first meeting on gravel mining and reclamation. We heard three speakers from the Alberta Research Council. With excellent overhead transparencies and two short films, the topic of gravel mining was well covered. Other Canadian provinces were included, particularly Ontario. A lengthy question period followed and copies of the presentations were made available to absentees. We are planning a second meeting on this topic with the reclamation of gravel mines emphasized.

Mr. Ron Findlay from Amoco Canadian Petroleum Company Limited was our June speaker on the acid disposition research program. Mr. Findlay briefly outlined the history of acid rain investigation beginning in Britain in 1872 up to the present research program. Good slides added to the informative talk and discussion period. The responsibility of cities and large towns as well as that of industry was stressed. The problem of communication with the public silent majority, a problem

we share, is recognized by this special research committee. Results of the workshops held under this program will be forwarded to our group. We again discussed the proposed PAC awards and were glad to be told this proposal will be on the agenda for the Annual Joint Meeting.

Due to the federal election, our September meeting was held on Tuesday, September 11. Our speaker was Gordon Lambert, Project Biologist, Oil Sands and Coal Department, Esso Resources Canada Limited. Mr. Lambert told us about the new "phased" Cold Lake project which took place when the "mega project" was suspended in 1981.

The first four phases are now under construction, covering approximately two sections of land (the mega would have been on 55 sections). There are advantages to the phased project:

- More care can be given to environmental impact.
- A water re-use program enabling the recycling of 100 percent of water used.
- Centralized well pads servicing 20 wells each.
- Directional drilling rather than vertical which results in less surface disturbance.

Mr. Lambert used slides to aid him in a most interesting talk followed by our usual question period.

Our October 2 meeting will feature reclamation of gravel mines, a follow-up to our May 1 meeting. Mr. Brian Hudson from Alberta Energy and Natural Resources will be the guest speaker.

My thanks to all members of the group for their participation and program suggestions. Also to the Research Staff of ECA who attended our meetings and particularly to our able secretary Randy Pretty. Our group was sorry to lose Bill Flook as Liaison Director; his wide knowledge clarified many concerns of ours. We welcome his successor Archie Landals.

Mrs. Betty Hunter
Chairman, Non-Renewable Resources Study Group

Members of the Non-Renewable Resources Study Group

Mrs. E.S. Hunter (Chairman) – Consumers Association of Canada
Mr. N.D. Bankes* – Law Society of Alberta
Mr. D. Broughton – Unaffiliated
Dr. W. Buchta – NAIT
Mr. G. Cameron – Edmonton Chamber of Commerce
Mr. G.T. Dudley – Alberta Irrigation Projects Association

Mr. A.C. Dunkley – National and Provincial Parks Association, Calgary/Banff Chapter
Mr. H. Fauser – Alberta Fish and Game Association
Mr. J. Hirsch – City of Medicine Hat
Mr. R. Jensen† – Alberta Irrigation Projects Association
Dr. A. Lamb – Alberta Chamber of Commerce
Prof. B.J. Mundel-Atherstone* – University of Lethbridge
Mrs. S. Nelson Pier – Calgary Local Council of Women
Dr. D.H. Norrie* – University of Calgary
Mr. G.F. Paschen – Archaeological Society of Alberta
Mr. R. Paul* – Native Outreach
Mr. J. Prostebby – Electric Utility Planning Council
Ms. H. Quan† – Coal Association of Canada
Dr. J. Railton – Coal Association of Canada
Mr. M.K. Ross* – Coal Association of Canada
Mrs. M. Stephenson – Alberta School Trustees Association
Mr. G. Stewart – Canada Petroleum Association

* No longer on Study Group
† Attended Study Group as Alternate

POLLUTION STUDY GROUP

Report from the Chairman – Mr. Bill Irwin

Linda Duncan, Executive Director, Environmental Law Centre, made a presentation on environmental law at our January meeting. She pointed out that Alberta Environment faces major problems because of the government's policy to balance resource development and management with environmental protection. Concern was expressed over lack of enforcement. In her opinion, industries failing to report a violation should be automatically prosecuted. She strongly advocated public input when standards were being developed.

Dixon Thompson, Chairman, Science Advisory Committee, spoke on water quality evaluation at our February meeting. He recommended we pay particular attention to monitoring procedures used to measure the impact of municipal, rural, and industrial wastes on water. Technical expertise must be used in order to obtain positive answers and actions from government. SAC is willing to assist in this area.

In March we toured the Glenmore Water Treatment Plant and Bonnybrook Sewage Treatment Plants in Calgary.

Water quality evaluation was discussed at our April meeting. We have requested comment from SAC on the use of assimilative capacity for effluent treatment as stated in the *Water Resources Management Principles for Alberta.*

Our May meeting discussed joint sponsorship with Alberta Environment of a water quality conference as part of Environment Week 1985. The Co-ordinating Committee accepted this proposal and an organizing committee has been established.

June's meeting looked at health concerns of the Fort MacKay Band. Guest speakers were Chief Dorothy McDonald and Mr. Jim Brisbois, the Band's consultant. A number of health and other problems were attributed to oil sands plants pollution. Concern was expressed over the lack of adequate medical investigation of the reported health problems. It was proposed that the ECA and the Pollution Study Group act as facilitators to seek some resolution to their problems.

In September Dr. Hans Boerger of Syncrude and Dr. Anne-Marie Anderson of Alberta Environment spoke on biomonitoring the effects of industrial plants, especially pulp mills, in rivers. Dr. Boerger recommended standardization of survey procedures for macrobenthic surveys. Alberta Environment is in the process of developing such standards.

Our October meeting is scheduled to look at environmental mediation.

The Lodgepole inquiry ended early in 1984. Dr. Martha Kostuch spent day after day of her own time in representing the Pollution Study Group. I would like to express our appreciation.

On behalf of the Study Group, I would like to express our appreciation to the ECA staff for their assistance in the past year and in particular to Randy Pretty, Elaine Kaiser, Bill Flook, Ken Nelson, and Archie Landals. We wish Bill Flook the best, now that he has retired, and success in his new position on the other side of the fence as a full-fledged PAC member.

Mr. Bill Irwin
Chairman, Pollution Study Group

Members of the Pollution Study Group

Mr. W. Irwin (Chairman) – Canadian Institute of Public Health Inspectors (Alberta Branch)
Mr. D. Abbey* – Canadian Union College
Mr. B. Alleyne – Alberta Public Health Association
Mr. K. Blom* – Alberta Public Health Association
Mr. E.R. Brushett – Energy Resources Conservation Board
Mrs. P. Campbell* – University Womens' Club of Edmonton (Canadian Federation)
Mr. N. Carlson – City of Wetaskiwin
Dr. M.H. Chaudhry – Lakeland College - Vermilion Campus
Dr. K. Cummins – Mount Royal College

Mr. J. Dilay† – Energy Resources Conservation Board
Mr. D.A. Gemmill – Chemical Institute of Canada– Canadian Society for Chemical Engineers (Calgary Section)
Dr. G.C.D. Griffiths – Unaffiliated
Dr. C. Hankins – Alberta Medical Association
Ms. J. Hedenstrom – Unaffiliated
Dr. K.W. Hodgins* – Alberta Medical Association
Dr. M. Hussain – Weed Control Research Society of Alberta
Dr. C. Konschuh* – Alberta Veterinary Medical Association
Dr. M. Kostuch – Unaffiliated
Mr. G. Lane* – Mount Royal College Students' Association
Mr. T. Lau – Strathcona Industrial Association
Ms. J. Lewin* – City of Calgary
Mrs. D.J. Lewoniuk – Alberta Lung Association
Mr. H.G. Lunty* – United Farmers of Alberta Co-operative Limited
Mr. R. Lutz – Fort Saskatchewan Regional Industrial Association
Mr. G. Merrick – Alberta Fish and Game Association
Mr. F.J. Morum* – Fort Saskatchewan Regional Industrial Association
Dr. P. Ramalingam – Canadian Union College
Mr. R. Romanetz – City of Drumheller
Mrs. J. Roschlaub – Alberta Pharmaceutical Association
Mr. W.K. Ross – Unaffiliated
Mrs. L. Scraba – Women of Unifarm
Dr. R.K. Shaw – Medicine Hat College
Mr. J.A. Shemanchuk – Entomological Society of Alberta
Dr. L. Wojtiw – Canadian Meteorological and Oceanographic Society

* No longer on Study Group
† Attended Study Group as Alternate

RENEWABLE RESOURCES STUDY GROUP

Report from the Chairman – Dr. Charlie Wood

The Study Group met seven times individually in 1984 and once jointly with Environment Protection on February 22. I was absent on vacation for the April 19 meeting, when Mr. Ron Whistance-Smith assumed the chair.

The group's areas of interest for the year included:

1) Changes taking place in the Fish and Wildlife Policy for Alberta such as the policy white paper entitled *Proposed Revision of the Wildlife Act* which includes such controversial suggestions as the introduction of game ranching in Alberta.

2) Logging in the Upper Oldman River Basin.

3) Water quality in Alberta generally with particular reference to the South Saskatchewan River Basin.

The Study Group has maintained a continuing interest in the Province's new wildlife policy and the proposed new Fish and Wildlife Act. The wildlife policy was discussed at the joint meeting with Environment Protection when Mr. Dennis Surrendi, Assistant Deputy Minister, Fish and Wildlife Division, Alberta Energy and Natural Resources presented his Division's objectives and outlined the document entitled *Status of Fish and Wildlife Resources in Alberta* which is designed to concern itself with every species of fish and wildlife in Alberta. For various reasons, the new fish and wildlife Act has not been tabled in the Alberta Legislature yet, but as soon as it is it will be examined by the Study Group.

One meeting (June 15) was devoted largely to the subject of game ranching in Alberta. Dr. Bob Hudson, Department of Animal Science, University of Alberta, spoke in favor of the concept, describing existing schemes in Kenya and New Zealand. He felt it could be properly controlled here, would provide a new industry for Alberta, and would be a use for some marginal land.

Dr. Val Geist, Faculty of Environmental Design, University of Calgary, formerly a supporter of the concept, spoke in opposition. His opposition now has many facets, including the problems associated with public ownership of wildlife, control of sale of meat, and the influence on present-day hunting practices. The speakers know each other well and enjoyed this debate, so they presented both sides of the issue well.

The issue of logging in the Upper Oldman River Basin occupied much of our time early in the year. A letter was written to the Hon. J. Zaozirny, Minister of Energy and Natural Resources, on behalf of our group and Environment Protection by the Chairman of PAC, Dr. Lub. Wojtiw, on March 19. PAC's opposition to this logging was based on the premise that an Integrated Management Plan should be in place before work proceeds in this and other areas. Mr. Zaozirny replied that "The timber harvesting operation in the Hidden Creek watershed is being conducted with strict adherence to the zoning and principles established by the Eastern Slopes Policy of 1977."

Early in the year it was recognized that water quality issues in Alberta were of concern to both the Renewable Resources and Pollution Study Groups. The Co-ordinating Committee decided that a good division of responsibilities would be to have Renewable Resources study water management issues and to have Pollution concern itself with specific water pollution problems.

At our April 19 meeting, Mr. Gary Sykes, our member representing the Alberta Chapter of the Canadian Water Resources Association, gave the group a comprehensive overview of the South Saskatchewan River Basin's resources, deficiencies, and conflicts. On May 16, Mr. Akio Masuda, Head, Water Quality Control Branch, Pollution Control Division, Alberta Environment, was our guest and

described the specific concerns of his Division which centered primarily on balancing resource development with environmental protection.

At the September 21 meeting, our guests were Mr. Jack Glen, Head, Planning Division, Alberta Environment, and Mr. Hal Hamilton, Head, Water Quality Control Division, Alberta Environment, who described many of the detailed concerns in the South Saskatchewan River Basin.

Suggested topics for next year's meetings include:

1) upcoming revisions to the Wildlife Act,
2) water resources management,
3) the impact of clear cutting on trapping and other forest uses.

I would like to thank all the Study Group members who enthusiastically attended meetings and continually contributed their ideas and opinions and Mr. Ron Whistance-Smith for assuming the chair on April 19.

Special thanks are also extended to our presently retired Director of Liaison, Bill Flook, for his many years of dedicated work with PAC and his continuous interest in and most welcome input to our activities. We wish him a long and happy retirement.

Thanks are also extended to the ECA staff for their continuous pleasant support of our activities, particularly to Ken Nelson, Randy Pretty, and Elaine Kaiser, and to our new Director of Liaison, Archie Landals.

Dr. Charlie Wood
Chairman, Renewable Resources Study Group

Members of the Renewable Resources Study Group

Dr. C. Wood (Chairman) – Alberta Research Council
Mr. D. Appleby – Cold Lake Community Advisory Committee
Mr. E.B. Cunningham* – Lethbridge Community College
Mr. P. Dobson – Alberta Wheat Pool
Mr. D. Dube – Canadian Institute of Forestry
Mr. J. Eisenhauer – Alberta Wilderness Association
Mrs. E. Friesen – Unifarm
Mr. A. Garbutt – Canadian Society of Environmental Biologists Alberta Chapter)
Mr. H. Gardner – Federation of Alberta Naturalists
Mr. R. Hawkesworth* – Alberta Urban Municipalities Association
Mrs. S. Henderson – Alberta Association of Registered Nurses
Mr. R.A. Hill – Olds College
Mrs. C. Hooks* – Alberta Association of Registered Nurses
Mr. E. Kure – Unaffiliated
Mr. K. Langhorn – University of Alberta, Students' Union

Mr. J. Lickacz – Fairview College
Mr. B. MacDonald – Grande Prairie Chamber of Commerce
Mr. B. Meller – Lethbridge Community College
Ms. M. Posey – Canadian Nature Federation
Mr. R. Rizzoli* – Alberta Trappers' Central Association
Mr. T. Shewchuk* – Grande Prairie Regional College
Dr. J. Snyder – Grande Prairie Regional College
Mr. G. Sykes – Canadian Water Resources Association (Alberta Chapter)
Mr. C. Wallis† – Alberta Wilderness Association
Mr. R. Whistance-Smith – Unaffiliated
Mr. A. Wierenga – Christian Farmers Federation
Dr. P. Woodard – Canadian Institute of Forestry
Mr. J. Wooders – Alberta Trappers' Central Association

* No longer on Study Group
† Attended Study Group as Alternate

URBAN ENVIRONMENT STUDY GROUP

Report from the Chairman – Dr. Lochan Bakshi

Membership – The membership of the Urban Environment Study Group increased during the year from 13 in January to 18 in November. Almost every meeting was attended by at least 60 percent of the members, and about half the meetings had over 80 percent members present. The members' interest in the Study Group was thus high.

In January, I was re-elected as Chairman, and Marcelle Lutz as Vice-Chairman, for 1984.

Representation in Other Committees – As is customary, in my capacity as Chairman, I represented the Study Group at the Co-ordinating Committee meetings, and in my absence, Marcelle Lutz represented the group. I also represented the Study Group at the meetings of the Environmental Education Advisory Committee.

Programs – Two meetings were devoted to the study of the civic concerns of the two metropolitan areas of Alberta. Problems and their solutions were presented by Mr. John Schnablegger (Edmonton) and Mr. Loyde Morasch (Calgary) in the areas of transportation management, dangerous goods routes, transit system, noise policy, maintaining the urban infrastructure, the 1988 Olympics, and others.

Mr. Keith Driver, a member of our own Study Group, explained the community planning process to the group. By presenting an overview of some projects, he clarified the planning considerations applied to produce the final draft.

Calgary Alderman Craig Reid, who is also a member of our Study Group, and Mr. Douglas Crarer of the City of Calgary presented their concerns about Bill 13 – Planning Amendment Act, 1984. The concerns were actively discussed by the group. Consequently we invited Mr. Jack Thomas, Assistant Deputy Minister of Alberta Municipal Affairs, to address the group. The members felt that certain problems with Bill 13 needed further clarification. As a result, a letter expressing the concerns of the Study Group has been sent to the Hon. Julian Koziak, the Minister of Municipal Affairs. We are looking forward to receiving a reply from the Minister.

The members of our Study Group were not satisfied by the response from the Minister of the Environment to the group's 1983 resolution about the Quiet Communities Directorate. The group discussed the matter with some concern and has sent a letter to the Minister asking for specific indication of when we might expect a positive action by the government. We are naturally awaiting his reply with bated breath.

The Study Group considered the EEAC proposal about PAC awards and made a positive recommendation to the Co-ordinating Committee.

Concluding Remarks – The Urban Environment Study Group had an interesting and successful year. As is indicated by the high attendance rate, the members were enthusiastic about the work of the Study Group. I wish to thank them for their active participation and co-operation throughout the year.

The working of our Study Group was made smoother and easier by the unhesitating co-operation from the ECA staff. Bill Flook was, as usual, a source of strength to us at every meeting. On his retirement, Archie Landals took over where Bill had left off, and we are delighted with his experience and knowledge in the field of environment. Ken Nelson of the publicity department ably participated in all our meetings and added considerably to our understanding of the issues discussed. Randy Pretty's assistance at every step of organizing and conducting the meetings has been of utmost value. Her thoroughness, competence, and friendly disposition took care of our burdens throughout the year. The group received very able secretarial assistance from Joyce Degelder and Elaine Kaiser. On behalf of our Study Group and on my own behalf, I extend sincere thanks and appreciation to all of them.

Finally, I am happy to report that our group has elected Bill Flook and Jean Sloan as Chairman and Vice-Chairman respectively for the coming year. I am confident that the group will be very active under their leadership. I wish you all good times during the Christmas Season and a fruitful 1985.

Dr. Lochan Bakshi
Chairman, Urban Environment Study Group

Members of the Urban Environment Study Group

Dr. L. Bakshi (Chairman) – Athabasca University
Mr. K. Carson – Alberta Association of Landscape Architects
Mr. M.J. Colledge – Alberta Motor Association
Dr. S. Dalton – Concordia College
Mrs. N. Dawson† – Council of Alberta Rural Ratepayers' Association
Mr. K. Driver – Unaffiliated
Mr. J.C. Finlay – Council of Alberta Rural Ratepayers' Association
Mr. W.A. Flook – Unaffiliated
Dr. K. Higginbotham – City of Edmonton
Dr. D.E. King – Urban Development Institute of Alberta
Ms. M. Kipen† – Alberta Association of Landscape Architects
Prof. H. Knowles* – Alberta Association of Landscape Architects
Ms. J. Lewin – City of Calgary
Mrs. M. Lutz – Consumers Association of Canada
Ms. L. Miller – Alberta Motion Picture Industries Association
Mr. D.M. Myrehaug – City of Camrose
Mr. T. Priddle* – Urban Development Institute of Alberta
Mr. E. Radbourne – City of Grande Prairie
Alderman C. Reid – Alberta Urban Municipalities Association
Mrs. P. Reschenthaller† – Concordia College
Mr. P. Rudiak – Keyano College
Mrs. J. Sloan – City of Lloydminster
Mr. A. Smith* – City of St. Albert

* No longer on Study Group
† Attended Study Group as Alternate

APPENDIX D: RESOLUTIONS PASSED AT THE 1984 ANNUAL JOINT MEETING

RESOLUTION 1

I. Eastern Slopes Policy

II. Be It Resolved:

THAT the Government of Alberta continue to implement the 1977 Policy for Resource Management of the Eastern Slopes until the 1984 revision has been subjected to public hearings by the Environment Council of Alberta and changed accordingly.

III. Background

The original Policy for Resource Management of the Eastern Slopes was released in 1977. The release of this policy followed extensive public hearings held by the Environment Conservation Authority in 1973 and 1974. The original policy was largely a result of these hearings and received wide support by the public.

In August of 1984, the Government released a new Policy for Resource Management of the Eastern Slopes. Although major revisions were made, no attempt was made to obtain public input prior to making the revisions. In fact, the Government's response to the public's request for input was that public input was not necessary because the revisions were merely administrative.

The management emphasis in the original policy was on watershed management so that a reliable supply of clean water would be ensured for aquatic habitat and downstream users. The emphasis in the revised policy is on maintaining or increasing the volume of water yield. Protection of water quality for downstream users is not mentioned in the management objectives.

The new policy also allows for the sale of public land, cottage and recreational townhouse developments, expansion of agriculture into the Eastern Slopes, and new oil and gas developments in the Prime Protection Zone. In fact, "the policy is sufficiently flexible so that all future proposals for land use and development may be considered."

The Government has a responsibility to manage the Eastern Slopes for the benefit and responsible use of all Albertans now and in the forseeable future. The original policy tended to achieve this goal. The new, revised policy does not.

IV. References:

Land Use and Resource Development in the Eastern Slopes. Report and Recommendations. Environment Conservation Authority. September 1984.

A Policy for Resource Management of the Eastern Slopes. July 1977.

A Policy for Resource Management of the Eastern Slopes Revised. 1984.

V. To be Directed To:

Lieutenant Governor in Council
Associate Minister of Public Lands and Wildlife
Minister of the Environment

VI. Proposed by the Environment Protection Study Group

RESOLUTION 2

I. Rocky Mountain World Heritage Sites

II. Be It Resolved:

THAT the Government of Alberta undertake the necessary agreements with the Federal Government to ensure the inclusion of the Willmore, White Goat, Siffleur, and Ghost River Wilderness Areas in the proposed Rocky Mountain World Heritage Site.

III. Background:

The four Alberta Wilderness Areas meet the requirements of Article 2 of the World Heritage Sites Convention which states that areas having natural features of outstanding universal value with physical, biological and aesthetic properties may be included in a World Heritage Site for scientific or conservation purposes.

The inclusion of the four Alberta Wilderness Areas in a Rocky Mountain World Heritage Site will not result in any changes to those uses permitted under existing legislation. Alberta will not lose any rights to those areas, but it will provide this province with the status associated with a World Heritage Site.

IV. References:

A Nature Guide to Alberta. Provincial Museum of Alberta. 1980. Hurtig Publishers. 368 pages.

World Heritage Sites Guidelines.

V. To Be Directed To:

Premier of Alberta
Minister of the Environment
Minister of Energy and Natural Resources
Associate Minister of Public Lands and Wildlife

VI. Proposed by the Environment Protection Study Group

RESOLUTION 3

I. Surface Materials Reclamation Deposits

II. Be It Resolved:

THAT the Minister of the Department of Energy and Natural Resources initiate an amendment to the Surface Materials Regulations of the Public Lands Act to raise the present $250 per acre security deposit to reflect current costs.

III. Background:

The present $250 per acre deposit fee is inadequate to cover present reclamation costs. It is understood that reclamation costs vary considerably from site to site. Ideally, deposits should cover the full cost of reclamation with no subsidy from the taxpayer. A figure of $500 per acre is suggested as a reasonable minimum deposit.

Consideration should be given to raising this deposit in situations where reclamation will ob usly be more expensive. This will ensure better environmental reclamation without additional burden on the taxpayer.

IV. References:

Surface Materials Regulations to the Public Lands Act.

V. To Be Directed To:

Minister of Energy and Natural Resources
Provincial Treasurer

VI. Proposed by the Non-Renewable Resources Study Group

RESOLUTION 4

I. Surface Materials, Fees, Rentals, and Royalties

II. Be It Resolved:

THAT the Minister of Energy and Natural Resources initiate a change to the Surface Materials Regulations of the Public Lands Act to increase the schedule of fees, rentals, and royalties to reflect current market values.

III. Background:

The present schedule of fees for leases and licenses, rentals, and surface materials does not reflect the current costs of administration and issuing of rentals, leases, licenses, and surface materials. The Government schedule of fees for licenses, leases, rentals, and surface material should be cost consistent with the private sector's schedule of fees for such services and surface materials.

A consistent schedule of fees will reduce the number of areas disturbed by surface material operations, thus reducing the impact on the environment.

IV. References:

Surface Materials Regulations of the Public Lands Act (note Schedule)

V. To Be Directed To:

Minister of Energy and Natural Resources

Copy to:

Provincial Treasurer

VI. Proposed by the Non-Renewable Resources Study Group

RESOLUTION 5

I. Vehicle Emission Standards

II. Be It Resolved:

THAT the standards for vehicle emissions in Canada for the 1986 model year be amended to meet the standards that are currently in effect in the United States.

III. Background

The emission standards for new light-duty motor vehicles have been in effect since 1975 and are subject to review for the model year 1986.

The Federal Government, in their notification of the review, included the following statement of the problem, "vehicular emissions have been found to impair air quality and are precursor pollutants to other environmental problems, such as acid precipitation and oxidant damage."

The three possible control actions under consideration are:

1) No change in standards (HC–2.0 g/vehicle mile, CO–25.0 g/vehicle mile, NO–3.1 g/vehicle mile)
2) Intermediate level of control (HC–1.5, CO–15.0, NO–2.0)
3) 90-95 percent control (similar to U.S.) (HC–0.41, CO–7.0, NO–1.0)

Nitrogen oxides can adversely affect human health by damaging respiratory tissue. Also, they have the potential to affect adversely the growth of plants and to accelerate the deterioration of fabric dyes and textiles.

The indirect effect of nitrogen oxides, which results in the production of photochemical smog, occurs when NO_X reacts in sunlight with hydrocarbons. The control of photochemical smog and ozone requires a reduction in both hydrocarbon and NO_X pollutants.

The third aspect of NO_X pollution is the relationship between nitrogen oxides and acid rain. NO_X emissions account for about 35 percent of Canada's acid rain in the summer months and as much as 50 percent during the winter.

Carbon monoxide is a gas that is rapidly absorbed through the lungs into the bloodstream. Even very low concentrations of CO can significantly reduce the oxygen carrying capacity of the blood.

The United States standards have been in place since 1981. By comparison, the Canadian standards are extremely lax. Canada permits emissions of NO_X, HC, and CO that are more than three, four, and seven times greater, respectively, than those permitted in the United States.

The present Canadian regulatory position causes acute political embarrassment to Canadians in discussions with U.S. legislators and officials on the need for continental controls on acid rain.

Environment Canada stated at the Hearings of the Sub-Committee on Acid Rain that vehicles with the three-way catalyst would have improved efficiency compared to Canadian vehicles without a catalyst.

Approximately 80 percent of the vehicles manufactured in Canada are sold in the United States and adhere to the more stringent exhaust emission standards south of the border. Many of the vehicles sold in Canada are manufactured in the United States, incorporating exhaust systems designed to meet the less stringent Canadian standards.

The House of Commons Sub-Committee on Acid Rain recommended "that the emission standards in Canada for nitrogen oxides (NO_X) be changed from 3.1 grams per vehicle mile to 1.0 gvm; for hydrocarbons (HC) from 2.0 gvm to 0.41 gvm; and for carbon monoxide (CO) from 25.0 gvm to 7.0 gvm."

We support this recommendation and, therefore, we recommend that the Federal Government adopt the most stringent option they are considering.

IV. References:

Time Lost, A Demand for Action on Acid Rain. Report of the Sub-Committee on Acid Rain of the Standing Committee on Fisheries and Forestry. 71 pages.

New Motor Vehicle Emissions Standards for Oxides of Nitrogen (NO_X), Hydrocarbons (HC) and Carbon Monoxide (CO). Canada Gazette Supplement, November 19, 1983.

V. To Be Directed To:

Minister of Transportation, Canada

Copies to:

Minister of Environment, Canada
Minister of External Affairs, Canada
Minister of the Environment, Alberta

VI. Proposed by the Pollution Study Group

RESOLUTION 6

I. Continuation of Environment Week Conferences Annually in Alberta

II. Be It Resolved:

THAT, in conjunction with Environment Week each year, a public conference continue to be sponsored by Alberta Environment, and organized jointly with the Public Advisory Committees of the Environment Council of Alberta.

III. Background:

For some time, members of the public concerned with the environment — including the Minister of the Environment — have expressed a desire for some annual centerpiece around which Environment Week observations might be developed. The framers of this resolution feel that a conference devoted to pertinent environmental issues would serve such a purpose very well, and could, in and of itself, achieve greater public awareness of such issues as and when these are exposed to public debate.

"Communicating Environmental Trends," a conference designed to focus attention on communications gaps which too often exist between citizens and policymakers over environmental issues, showed what could be done with regard to Environment Week conferences. It was held in Red Deer on June 1, 2, and 3, 1984, and was quite successful despite limited attendance — due at least in part to a short period of promotion. This conference featured all the desired aspects contained in the resolution: it was sponsored by Alberta Environment, it was organized jointly by a branch of Alberta Environment together with the ECA's Environmental Education Advisory Committee, and ECA staff members were also involved.

Those who were attempting to organize this conference knew they would receive some backing from Alberta Environment, but since the item was not budgeted, the degree and timing of this support were uncertain. Hence, promotional decisions were delayed, and time was lost from the program. The lesson which needs to be learned from this experience is that a worthwhile conference needs longer term commitment of resources. Such an advance commitment is needed so that organizers can approach their task with a greater degree of assurance about the level of support they and their conference will be receiving.

This resolution seeks to do two things: (a) to establish the Environment Week Conference as an annually programmed item on the Alberta Environment budget, and (b) to prompt the ECA and its Advisory Committees to gear their programs with this conference in mind each year.

IV. References:

Minutes of Co-ordinating Committee meeting with Environment Minister, Hon. Fred Bradley, on August 22, 1984.

V. To Be Directed To:

Minister of the Environment

VI. Proposed by the Environmental Education Advisory Committee

RESOLUTION 7

I. History of the Environmental Movement in Alberta

II. Be It Resolved:

THAT a history of the environmental movement in Alberta, and an assessment of its accomplishments, is urgently needed, and that Alberta Environment now take the lead role by initiating and funding aspects of this work through its Environmental Education Resources Branch.

III. Background:

Attendees at the Communicating Environmental Trends Conference in Red Deer, June 1–3, 1984 expressed concern about their need for more awareness of how the environmental movement in Alberta had developed. This concern was based on the belief that past experience should be available to those involved with future environmental issues. There is a certain amount of urgency attached to this concern in that much of this background material reposes in peoples' memories, and as such it is a perishable commodity.

The history of the environmental movement in Alberta has also recently received some attention in Alberta Environment's magazine, *Environment Views*. The January/February 1984 edition of that publication thus becomes one of the few resources now available to the public on this matter.

Preliminary work already done by the Department, in particular the draft document entitled *Environmental Education in Alberta – The Lost Ten Years* by Susan Bramm, shows what can be done. Conference attendees felt this should be a first step in a series, not simply a one-shot effort. As a result, a recommendation was made by a committee of the conference attendees calling for this type of continuing effort by Alberta Environment.

IV. References:

Bramm, Susan. *Environmental Education in Alberta – The Last Ten Years.* 1984. Alberta Environment.

Krawetz, Natalia. *Recommendations Put Forward at the Conference: "Communicating Environmental Trends" (Red Deer, June 1–3, 1984).* Alberta Environment.

Environment Views. January/February 1984 Edition.

Abercrombie, Sheila. "Letter to the Editor" in *Environment Views,* July/August 1984.

Guay, Julian. *Paper Presented to Communicating Environmental Trends Conference.* June 2, 1984. Red Deer.

V. To Be Directed To:

Minister of the Environment

VI. Proposed by the Environmental Education Advisory Committee

APPENDIX E. RESPONSES TO 1983 RESOLUTIONS

RESOLUTION I. GOVERNMENT GRANT SUPPORT FOR LEADERSHIP AND ENVIRONMENTAL EDUCATION PROGRAMS

Be It Resolved:

That Government maintain or expand grants which support those efforts of citizen groups that: (1) inform the public about environmental issues and concerns, and (2) provide leadership development in the areas of environmental education and/or citizen participation in environmental decision making.

Response:

In consultation with my cabinet colleagues from Alberta Education, Alberta Energy and Natural Resources, and Alberta Recreation and Parks, I have found general support for the resolution and an acceptance of a responsibility to continue activity at a level consistent with current government spending policies and the mandates of the respective departments.

The support given by the four departments to leadership development and environmental education support is extensive. This support has materialized in two ways. The first provides direct funding through grants for programs to citizen groups. Although these funds will necessarily be under review by the government due to the current budgetary situation, each department is seeking the most cost-effective way to continue the present level of support.

Secondly, the government provides for extensive leadership development and environmental education support. Each of the four departments in question has provided me with an impressive list of services and materials that have been developed internally. This support responds to the perceived needs of a variety of citizen groups. Recipients of this support span the formal and informal education sectors, from distinctly identifiable interest groups to the general public and from the very young to the elderly.

To illustrate the support offered by the Alberta Government, a chart has been appended to this report that highlights available programs from each of the departments noted. I hope this will help to assure the Environment Council of Alberta of the seriousness that this government takes in encouraging environmental education.

The Council's role as advisor to the Alberta Government on behalf of the people of Alberta as regards this resolution is a valued one. I personally encourage the Council to continue to identify areas of need in environmental education and to direct my attention to these needs.

ALBERTA GOVERNMENT SUPPORT FOR LEADERSHIP DEVELOPMENT AND ENVIRONMENTAL EDUCATION

Alberta Education

1) Has provided for environmental education within the Alberta Program of Studies.
2) Has developed and disseminated to all schools in Alberta two support documents:
   a) Environmental Education Manual for Grades 1-12
   b) Environmental Education – Catalogue of Resources for Grades 1-12

Alberta Energy and Natural Resources

A) Alberta Forest Service
   1) Support youth development programs through the
      a) Junior Forest Warden Program
      b) Junior Forest Ranger Program
   2) Provide leadership training, consultation, and assistance to various citizen groups.
   3) Conduct research and public participation programs related to land use concerns.

B) Energy Conservation Branch
   1) Administers a School Visitation Program.
   2) Provides for leadership development through a Teacher Professional Development Program.
   3) Provides teaching materials through the Curriculum Support Materials Program.
   4) Provides consultation, leadership, and materials development through its two residential programs
      (a) Alberta Energy Savers Program
      (b) Home Energy Savers Workshop Program

C) Fish and Wildlife Division
   1) Supports a wildlife education program, Project WILD, for Grades 1-12.
   2) Provides leadership development and program support through the Hunter Trainer Education Program.
   3) Develops and disseminates general information on the wildlife resources.
   4) Involved in co-operative programming with the John Janzen Nature Centre.

D) Resource Evaluation and Planning Division
   1) Has provided for a public involvement program directed to effective decision-making concerning land use options.

Alberta Environment

1) Provides for leadership development through support of the Workshop Network, a program of professional development for teachers and leaders.
2) Provides teaching materials and general information through its Curriculum Support Materials Development Program.
3) Supports a waste education program, Project S.W.E.E.P., for Grades 4-12.
4) Through the Public Communications Division, materials are provided that support the study of environmental issues.
5) Produces a broad range of activity and material for Environment Week.
6) Provides direct support to the Environmental and Outdoor Education Council for projects and conferences.
7) Is providing direct support to the Environment Council of Alberta for the Second Environmental Education Conference.
8) Produces and disseminates the magazine *Environment Views* and related educational materials.

Alberta Recreation and Parks

A) Recreational Development Division
   1) Blue Lake Centre programs offer
      a) leadership and outdoor skill programs
      b) specialized training programs for teachers – linking outdoor skills to the curriculum
   2) Provides mobile support to teachers across Alberta through the Outdoor Alberta mobile program.
   3) Provides direct support to the Environmental and Outdoor Education Council projects and conferences.
   4) Provides direct support to provincial organizations for the development of outdoor resource materials.
   5) Provides direct support to provincial organizations for local, regional, and provincial leadership and program workshops.
   6) Provides travel support to schools via the Discover Alberta Youth Travel Program.

B) Visitor Services Program of the Operations and Maintenance Division
   1) Has developed group use facilities in provincial parks that can be and are used for environmental education.
   2) Produces learning resource materials that provide leaders with information about park resources and the role of parks in protecting the environment.
   3) Provide assistance to teachers and leaders through consultation and workshops for environmental education program development.

RESOLUTION II. RESEARCH INTO LINING OF IRRIGATION DITCHES

Be It Resolved:

That the Government of Alberta, in co-operation with the commercial producers and marketers of fly ash, undertake a research project to evaluate the use of lining materials containing fly ash, to reduce seepage from irrigation water carriers, dams, and reservoirs.

Response:

While the resolution has merit in that an abundant cheap resource would be used to conserve water resources, it would incur some environmental and engineering risks not identified in the proposal.

The engineering properties of fly ash vary significantly from source to source. The permeability (0.005 to 0.0000061) of compacted fly ash is similar to or higher than that of many in situ subsoils. Fly ashes with poor self-hardening properties would be susceptible to erosion. Fly ash mixtures with concrete or lime, much of which is known technology, may have applications in seepage control structures.

It is well known in the scientific literature that fly ash in contact with water can release heavy metals, cations, and other ions in quantities significant enough to adversely affect crop growth and water quality. For example, water extractions of some Alberta fly ashes can yield leachate concentrations of up to 1,600 ppm sulphate, 200 ppm aluminum, and 240 ppm boron. Also, boron, manganese, and selenium toxicity and magnesium deficiency from mixing fly ash and soil have been identified as real or potential risks in Alberta. However, given the volume of water moving through irrigation ditches, the dilution factor would be many times that of laboratory water extracts or soil amendments. As well, weathered ash is reported to be less toxic than fresh ash.

The Department of Agriculture, in co-operation with the Magrath Irrigation District, is proposing to install a 300-meter test section of canal lining utilizing a mixture of portland cement, fly ash and glass fiber. The probable method of application is by mixing the materials into a prepared canal section by roto-tilling, adding water and compacting. Funding for this project will be sought through the Irrigation Council and the "Farming for the Future" research program.

There is some ongoing research into varying the content of fly ash in concrete mixtures for lining irrigation canals. The possibility of incorporating fly ash into the base of a concrete liner has not been tried due to the type of mechanized slip-form operation that is used to install the concrete liner. Limited experience with spray-on application has shown that there are difficulties with this application method; however, more research may also be warranted on this method in the future.

RESOLUTION III. RECYCLING OF LUBRICATING OIL

Be It Resolved:

That Alberta Environment adopt more effective means to promote public acceptance of the need to reduce pollution and conserve petroleum supplies by the regular recycling of used lubricating oils.

Response:

The department has already undertaken considerable work establishing a used lube oil recovery program for the province. The program was recently announced at the Edmonton International Auto Show. Currently there are approximately 350 service stations agreeing to take oil back from the public, 25 collection and storage tanks in rural Alberta, two active collection systems in rural Alberta, and two more scheduled to come on stream in the calendar year 1984.

To go along with this, an advertising program has been developed to inform the general public about this program. We are prepared to advertise, on an as-required basis, to enhance used lube oil recovery in the province.

RESOLUTION IV. PUBLIC HEARINGS ON WATER MANAGEMENT

Be It Resolved:

That the Lieutenant-Governor in Council direct the Environment Council of Alberta to conduct public hearings on water management in Alberta.

Response:

The department recognizes the value of conducting public hearings on water management policy issues as well as for specific development projects. A current policy issue which must be examined is a decision on the overall water allocation strategy for the South Saskatchewan River Basin in Alberta.

The Alberta Water Resources Commission has been requested to carry out public hearings on water management in the South Saskatchewan River Basin, and has concurred with that request. The Alberta Water Resources Commission has the legislated mandate to:

1) assess and review long-term water resources planning by the Government of Alberta in relation to agricultural, economic, community, and environmental factors in Alberta;

2) undertake evaluations of specific short-term and long-term projects affecting the water resources of Alberta and to advise the Lieutenant-Governor in Council accordingly;

3) monitor intergovernmental negotiations affecting the water resources of Alberta and to make recommendations as to the public interest of Alberta in that regard;

4) advise the Lieutenant-Governor in Council respecting the exercise of any of his powers under legislation of the Province of Alberta pertaining to water resources and, generally, to advise the Lieutenant Governor in Council on the policy of the Government of Alberta respecting Alberta's water resources.

The commission has been designated as the appropriate body to conduct such hearings. The South Saskatchewan River Basin public hearings will deal with such policy issues as allocation of water between the three major sub-basins (the Red Deer, Bow, and Oldman); the allocation of water between the various competing uses in the basin; the allocation of available supplies to the various users in the basin; water quality issues; institutional arrangements; and water management strategies for development of the water resources in the basin.

When it is timely to review other substantive water policy issues, the department anticipates that the Alberta Water Resources commission would again be called upon to conduct public hearings.

RESOLUTION V. THE IMPACTS OF POLLUTION ON HEALTH

Be It Resolved:

That the Lieutenant-Governor in Council direct the Environment Council of Alberta to hold public hearings on methods and procedures of dealing with environment-related human health concerns.

Response:

The Government of Alberta recognizes the need to review the subject of environmental health and the responsibilities of the Departments of Environment, Social Services and Community Health ,and Workers' Health Safety and Compensation to ensure that Alberta's methods and procedures associated with environmental health matters continue to receive appropriate attention from government. An interdepartmental review of this complex and dynamic area of public interest will be undertaken and when complete, the government will give further consideration to the resolution and the need for public hearings on the matter.

RESOLUTION VI. HAZARDOUS WASTE MANAGEMENT

Be It Resolved:

That the Alberta Government actively pursue a solution to the hazardous waste problem in Alberta in accordance with its *Position Paper on Industrial and Special Waste Management*, 1982.

Response:

Alberta Environment has been actively pursuing a solution to the hazardous waste problem in the following areas:

a) The selection of an environmentally and socially acceptable site on which to build a central treatment facility. (On March 12, 1984, a site near the Town of Swan Hills was chosen for the central facility. The land for such a site will be owned by the Crown.)

b) The selection of a technically and financially qualified proponent to build and operate the central treatment facility.

c) The setting up of the Alberta Special Waste Management Corporation to oversee the operations of the central treatment facility.

d) The finalizing of suitable regulations and guidelines to ensure the safe handling, transportation, and disposal of hazardous wastes in Alberta.

The achievement of the above remains a top priority of Alberta Environment. Decisions on the final system will be forthcoming as soon as they are available.

RESOLUTION VII. JOINT SITE FOR EDMONTON MUNICIPAL AND ALBERTA HAZARDOUS WASTE PROCESSING

Be It Resolved:

That the City of Edmonton and the Province of Alberta jointly acquire a site or sites in or near Edmonton on which to operate a municipal solid waste (MSW) incinerator and a hazardous waste (HW) processing facility, with the non-combustible residues from both to be landfilled at a separate location.

Response:

While there is merit in the proposal with regard to economics of scale, shared facilities, and heat recovery, there is no information to suggest that a joint project would be able to be sited anywhere within an economic haul distance from Edmonton either from an environmental or a social perspective.

Constraint mapping of Strathcona County shows some potentially suitable areas; however, nearby acreages suggest certain opposition from residents. Both the City of Edmonton and Alberta Environment have experienced opposition to the siting of a municipal solid waste facility and the hazardous waste plant. A combined project could be expected to generate as much if not more opposition. It is a policy of Alberta Environment that we will attempt to site these facilities only on invitation of the local authority.

Since the decision has been made to site a central special waste facility near Swan Hills, the need for additional facilities is greatly reduced. The City of Edmonton together with the outlying municipalities are currently discussing with Alberta Environment a study with respect to solid waste management in the Edmonton Region.

RESOLUTION VIII. QUIET COMMUNITIES DIRECTORATE

Be It Resolved:

That the Government of Alberta establish the Quiet Communities Directorate, as recommended in the Environment Council of Alberta's *Report and Recommendations* on noise, with the mandate to implement the recommendations contained in that report.

Response:

The ECA report recommendation for a new government agency has to be reviewed in the current economic context and especially with regard to the government policy of constraint or reduction in the provincial civil service. The ECA report has been reviewed by an interdepartmental committee and a formal government decision is pending.

APPENDIX F. LIST OF PUBLICATIONS

DECEMBER 1984

All publications listed are free upon request to the Environment Council. Single copies of up to 10 different publications may be ordered. Please do not waste printed material. Order only those publications which are actually needed and useful.

BROCHURES

Environment Council of Alberta. ECA document. July 1983.

Public Hearings.

LEGISLATION

The Environment Council Act. Chapter E-13, R.S.A. 1980.

ANNUAL REPORTS

Annual Report, 1979. (ECA80-AR)

Annual Report, 1980. (ECA81-AR)

Annual Report, 1981. (ECA82-AR)

Annual Report, 1982. (ECA83-AR)

Annual Report, 1983. (ECA84-AR)

PUBLICATIONS RELATED TO PUBLIC HEARINGS

The Conservation of Historical and Archaeological Resources in Alberta, May and June 1972.

Report and Recommendations. June 1973.

Land Use and Resource Development in the Eastern Slopes, June and July 1973.

Information Bulletins:

Oldman River Drainage Basin. Prepared by: The Oldman River Regional Planning Commission, March 1973.

Bow River Watershed Basin. Prepared by: The Calgary Regional Planning Commission, May 1973.

Athabasca - Yellowhead Area. Prepared by: Alberta Department of Municipal Affairs, May 1973.

Report of the Science Advisory Ad Hoc Committee. 1973.

Interim Reports:

Commercial Tourist Development Proposals. E.C.A. document, 1974.

Oldman River Basin. E.C.A. document, 1974.

Bow River Basin. E.C.A. document, 1974.

North Saskatchewan and Red Deer River Basins. E.C.A. document, August 1974.

Athabasca River Basin. E.C.A. document, August 1974.

Smoky River Basin. E.C.A. document, September 1974.

The Use of Pesticides and Herbicides in Alberta, October and November 1974, January to April 1975.

Information Bulletins:

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Information Bulletins:

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An Assessment of Alternatives to a Dam on the Red Deer River. Prepared by: Alberta Environment, Planning Division, December 1976.

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Agricultural Land Protection Mechanisms in Canada. Prepared by E.W. Manning, Environment Canada, Lands Directorate, March 1983. (ECA83-17/IB31)

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The Use of Municipal Waste as Fuel. Prepared by: Calvin Webb, March 1983. (ECA83-ST/2)

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Brochure:

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Proceedings of the 1981 Annual Joint Meeting. (ECA82-PA/AR)

Proceedings of the 1982 Annual Joint Meeting. (ECA83-PA/AR)

Proceedings of the 1983 Annual Joint Meeting. (ECA84-PA/AR)

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1979 Resolutions Passed at the Ninth Annual Joint Meeting.

1980 Resolutions Passed at the Tenth Annual Joint Meeting. (ECA81-PA/1)

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Annual Reports:

Sixth Annual Report, 1977.

Seventh Annual Report, 1978. (SAC79-AR)

Eighth Annual Report, 1979. (SAC80-AR)

Occasional Papers:

Trace Elements in Coal: a Review. Prepared by: L.V. Hills and W. Jones, March 1981. (ECA81-SA/1)

APPENDIX G. LOCATION OF INFORMATION CENTERS

Banff

The Banff Centre
Box 1020
Banff, Alberta
T0L 0C0

Blairmore

Blairmore Municipal Library
Blairmore, Alberta
T0K 0E0

Bonnyville

Bonnyville Municipal Library
Box 1438
Bonnyville, Alberta
T0A 0L0

Brooks

Brooks Public Library
Box 1149
Brooks, Alberta
T0J 0J0

Calgary

Calgary Public Library
Business and Science
616 McLeod Trail SE
Calgary, Alberta
T2G 2M2

Calgary Regional Planning Commission
4303 - 11 Street SE
Calgary, Alberta
T2G 4X1

Collections Room
Dept. of Geography
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Environmental Design Unit, 8th Floor
Library Tower
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Mount Royal College
4825 Richard Rd SW
Calgary, Alberta
T3E 6K6

Resource Centre Office
Faculty of Environmental Design
Room 1003A
Earth Science Building
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Camrose

Camrose Public Library
4863 - 50 Street
Camrose, Alberta
T4V 1P6

Canmore

Canmore Public Library
Box 460
Canmore, Alberta
T0L 0M0

Carstairs

Carstairs Library
Box 128
Carstairs, Alberta
T0M 0N0

Coronation

Coronation Community Library
Coronation Schoo'
Coronation, Alberta
T0K 1C0

Drumheller

Drumheller Public Library
Box 1599
Drumheller, Alberta
T0J 0Y0

Edmonton

Alberta Environment Library
14th Floor
Oxbridge Place
9820 - 106 Street
Edmonton, Alberta
T5K 2J6

Alberta Legislature Library
Room 216
Legislature Building
Edmonton, Alberta
T5K 2B6

Edmonton Regional Planning Commission Library
602, 10025 - 106 Street
Edmonton, Alberta
T5J 1G6

Government Publications
University of Alberta Library
Edmonton, Alberta
T6G 2J8

Edson

Edson Public Library
Box 249
Edson, Alberta
T0E 0P0

Fort McMurray

Fort McMurray Public Library
9912A Franklin Avenue
Fort McMurray, Alberta
T9H 2K6

Grande Prairie

Grande Prairie Public Library
10032 - 100 Avenue
Grande Prairie, Alberta
T8V 0V3

South Peace Regional Planning Commission
Resource Centre
200 Windsor Court
9835 - 101 Avenue
Grande Prairie, Alberta
T8V 0X6

Hinton

Hinton Municipal Library
Box 818
Hinton, Alberta
T0E 1B0

Lacombe

Parkland Regional Library
Alberta Agriculture Building
Lacombe, Alberta
T0C 1S0

Lacombe Public Library
Lacombe, Alberta
T0C 1S0

Lethbridge

Buchanan Resource Centre
Lethbridge Community College
Lethbridge, Alberta
T1K 1L6

Government Documents Office
University of Lethbridge Library
Lethbridge, Alberta
T1K 3M4

Lethbridge Public Library
810 - 5th Avenue S
Lethbridge, Alberta
T1J 4C4

Library
Oldman River Regional Planning Commission
905 - 4th Avenue S
Lethbridge, Alberta
T1J 4E4

Olds

Olds Municipal Library
Box 968
Olds, Alberta
T0M 1P0

Peace River

Peace River Municipal Library
9807 - 97 Avenue
Peace River, Alberta
T0H 2X0

Red Deer

Red Deer Public Library
4818 - 49 Street
Red Deer, Alberta
T4N 1T9

Red Deer Regional Planning Commission Library
2830 Bremner Avenue
Red Deer, Alberta
T4R 1M9

Reader's Service Librarian
Red Deer College Library
56 Ave & 32 Street
Red Deer, Alberta

Sherwood Park

County of Strathcona Municipal Library
Government Documents Section
2001 Sherwood Drive
Sherwood Park, Alberta
T8A 3J4

Spruce Grove

Spruce Grove Public Library
Box 2759
Spruce Grove, Alberta
T0E 2C0

Vegreville

Vegreville Public Library
Box 129
Vegreville, Alberta
T0B 4L0

Vermilion

Lakeland College Library
Vermilion, Alberta
T0B 4M0

Westlock

Westlock Municipal Library
Box 1198
Westlock, Alberta
T0G 2L0

Wetaskiwin

Battle River Regional Planning Commission Library
5014 - 48 Avenue
Wetaskiwin, Alberta
T9A 0M9

Whitecourt

Whitecourt Public Library
Box 150
Whitecourt, Alberta
T0E 2L0

APPENDIX H. DISTRIBUTION OF PROCEEDINGS

A complete set of the proceedings of each public hearing we conduct will be available for use in the following ECA information centres. Proceedings and original copies of briefs may also be viewed at our own library.

Battle River Regional Planning Commission Library
5014 - 40 Avenue
Wetaskiwin, Alberta
T9A 0M9

Brooks Public Library
Box 1149
Brooks, Alberta
T0J 0J0

Buchanan Resource Centre
Lethbridge Community College
Lethbridge, Alberta
T1K 1L6

Calgary Public Library
Business and Science
616 McLeod Trail SE
Calgary, Alberta
T2G 2M2

Camrose Public Library
4863 - 50 Street
Camrose, Alberta
T4V 1P6

Collections Room
Dept. of Geography
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Drumheller Public Library
Box 1599
Drumheller, Alberta
T0J 0Y0

Environmental Design Unit
8th Floor
Library Tower
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Fort McMurray Public Library
10012 Franklin Avenue
Fort McMurray, Alberta
T9H 2K6

Government Documents Office
University of Lethbridge Library
Lethbridge, Alberta
T1K 3M4

Government Publications
The Library
University of Alberta
Edmonton, Alberta
T6G 2J8

Grande Prairie Public Library
10032 - 100 Avenue
Grande Prairie, Alberta
T8V 0V3

Lakeland College Library
Vermilion, Alberta
T0B 4M0

Lethbridge Public Library
810 - 5th Avenue S
Lethbridge, Alberta
T1J 4C4

Alberta Environment Library
14th Floor
Oxbridge Place
9820 - 106 Street
Edmonton, Alberta
T5K 2J6

Calgary Regional Planning Commission Library
4303 - 11 Street SE
Calgary, Alberta
T2G 4X1

Red Deer Public Library
4818 - 49 Street
Red Deer, Alberta
T4N 1T8

Red Deer Regional Planning Commission Library
2830 Bremner Avenue
Red Deer, Alberta
T4N 5Y5

South Peace Regional Planning Commission
Resource Centre
200 Windsor Court
9835 - 101 Avenue
Grande Prairie, Alberta
T8V 0X6

Resource Centre Office
Faculty of Environmental Design
Room 1003A
Earth Science Building
University of Calgary
Calgary, Alberta
T2N 1N4

The Banff Centre
Box 1020
Banff, Alberta
T0L 0C0

The Library
Mount Royal College
4825 Richard Road SW
Calgary, Alberta
T3E 6K6

Vermilion Public Library
Box 476
Vermilion, Alberta
T0B 4M0

Whitecourt Public Library
PO Box 150
Whitecourt, Alberta
T0E 2L0